# Author Index to Volume 31

References with (L) are to Letters to the Editor; (E) to Errata


**Abeles, B., G. D. Cody, and D. S. Beers.** Apparatus for the measurement of thermal diffusivity of solids at high temperatures—1585

**Acrivos, A., M. J. Shah, and E. E. Petersen.** On the flow of a non-Newtonian liquid on a rotating disk—963

**Adams, Edmond** (see Hubbard, William M.)—368S

**Adamsky, R. F.** Preferred orientation and ordering in evaporated films of Fe, Ni, and Fe-Ni—289S

**Addamiano, Arrigo and Manuel Aven.** Some properties of zinc sulfide crystals grown from the melt—36

**Adler, Robert and Glen Wade.** Beam refrigeration by means of large magnetic fields—1201

**Agarwal, Paul D. and D. C. Graham.** Effect of eddy currents on domain wall configurations, wall motion, and loss for a domain model of cube-on-edge material—249S

—— **and L. Rabins.** Rigorous solution of eddy current losses in rectangular bar for single plane domain wall model—246S

**Alger, R. S.** (see Jordan, R. D.)—747

**Allen, F. G., T. M. Buch, and J. T. Law.** $\phi$ layers on vacuum heated silicon—979

**Allen, R. B., H. Bernstein, and A. D. Kurtz.** Effect of oxide layers on the diffusion of phosphorus into silicon—334

**Allen, Robert D., Louis F. Glasier, Jr., and Paul L. Jordan.** Spectral emissivity, total emissivity, and thermal conductivity of molybdenum, tantalum, and tungsten above 2300°K—1382

**Alley, R. E., Jr. and V. E. Legg.** Effects of hydrostatic pressure on the properties of magnetic materials—239S

**Allison, F. E. and J. Thomas Schriempf.** Explosively loaded metallic cylinders. II—846

—— **and R. W. Watson.** Explosively loaded metallic cylinders. I—842

**Alperin, H. A.** Neutron diffraction investigation of the magnetic structure of nickel oxide—354S

**Amelinckx, S., G. Strumane, and W. W. Webb.** Dislocations in silicon carbide—1359

—— **and P. Delavignette.** Electron optical study of basal dislocations in graphite—2126

—— (see Delavignette, P.)—1691(L)

**Anderson, Elmer E. and J. Richard Cunningham, Jr.** High-permeability garnets—1687(L)

—— (see Cunningham, J. Richard, Jr.)—45S

—— (see McDuffie, G. E.)—47S

**Anderson, Franklin R. and V. F. Holland.** Ion-bombardment etching of synthetic fibers—1516

**Anderson, G. S. and G. K. Wehner.** Atom ejection patterns in single-crystal sputtering—2305

**Anderson, J. M.** Ultimate and secondary electron energies in the negative glow of a cold-cathode discharge in helium—511

—— **and L. A. Harris.** Negative glow plasma as a cathode for electron tubes—1463

**Andrä, W., Z. Málek, W. Schüppel, and O. Stemme.** "Spontaneous magnetic anisotropy" in polycrystalline thin films—442(L)

**Andrews, C. L.** Analog study of large-signal high-frequency diodes—1431

**Andrews, R. D.** (see Rudd, J. F.)—818

**Antell, G. R.** Chlorine and iodine as impurities in InAs and GaP—1686(L)

**Arajs, Sigurds and D. S. Miller.** Magnetic behavior of polycrystalline neodymium, holmium, and erbium from 300 to 1500°K—325S

—— **and D. S. Miller.** Paramagnetic susceptibilities of Fe and Fe-Si alloys—986

—— **and D. S. Miller.** Spontaneous magnetization of some gadolinium alloys—213(L)

**Arbogast, C. L.** (see Smith, J. F.)—99

**Armstrong, R. W., J. W. Faust, Jr., and W. A. Tiller.** Structural study of the compound $AgSbTe_2$—1954

**Arnold, George W.** (see Compton, W. Dale)—621

**Arnott, R. J.** (see Goodenough, J. B.)—342S

**Arrott, Anthony** (see Freeman, Michael W.)—404S

**Ashkin, A. and L. D. White.** Partition noise in electron beams at microwave frequencies—1351

**Asimow, Robert.** Precision lattice parameter measurements of cold-worked metals—410

**Atwater, H. A.** Microwave measurement of semiconductor carrier lifetimes—938(L)

**Auer, P. L.** Potential distributions in a low-pressure thermionic converter—2096

—— **and H. Hurwitz.** Positive column formation in ion sources employing surface ionization—1007

**Aukerman, L. W. and R. K. Willardson.** High-temperature Hall coefficient in GaAs—939(L)

**Auld, B. A.** Finite amplitude electromagnetic waves in gyromagnetic media—106S

—— Walker modes in large ferrite samples—1642

**Avakian, P. and A. Smakula.** Growth of cesium chloride crystals from solution and melt—1720

**Aven, Manuel** (see Addamiano, Arrigo)—36

**Bachmann, L., W. H. Orr, T. N. Rhodin, and B. M. Siegel.** Determination of surface structure using ultrahigh vacuum replication—1458

**Backus, John and Norman E. Huston.** Ion energies in a cold cathode discharge in a magnetic field—400

**Bacon, Roger.** Growth, structure, and properties of graphite whiskers—283

**Baer, G., D. Ganz, and H. Thomas.** Secondary recrystallization in vacuum annealed silicon iron—235S

**Bagley, E. B.** Hooke's law in shear and polymer melt fracture—1126(L)

—— **and A. M. Birks.** Flow of polyethylene into a capillary—556

**Bailey, H. R. and B. K. Larkin.** Remarks on "Some criteria for the *in situ* combustion of crude oil"—1123(L)

**Bailey, John M. and Allan T. Gwathmey.** Dislocation arrays in depth and recrystallization produced by surface deformation of single crystals of copper at high temperature—215(L)

**Bailey, P. C.** Absorption and reflectivity measurements on some rare earth iron garnets and $\alpha$-$Fe_2O_3$—39S

**Baker, G. S.** (see Gabrysh, A. F.)—1785

**Ballard, S. S.** (see McCarthy, Kathryn A.)—1410

**Balluffi, R. W. and R. O. Simmons.** Changes in macroscopic shape, lattice parameter, and density in crystals due to point defects—2284

**Barakat, Richard and Robert Barakat.** Optical studies of the diffraction of water waves by circular and thin elliptic cylinders—474

**Barakat, Robert** (see Barakat, Richard)—474

**Barbour, J. P.** (see Dyke, W. P.)—790

**Barker, R. C. and R. M. Brownell.** DC measurements on tape-wound cores—243S

**Barnes, Bentley T.** Intensities of $\lambda$1850 and $\lambda$2537 in low-pressure mercury vapor lamps with rare gas present—852

# Author Index to Volume 31

References with (L) are to Letters to the Editor; (E) to Errata


**Abeles, B., G. D. Cody, and D. S. Beers.** Apparatus for the measurement of thermal diffusivity of solids at high temperatures—1585

**Acrivos, A., M. J. Shah, and E. E. Petersen.** On the flow of a non-Newtonian liquid on a rotating disk—963

**Adams, Edmond** (see Hubbard, William M.)—368S

**Adamsky, R. F.** Preferred orientation and ordering in evaporated films of Fe, Ni, and Fe-Ni—289S

**Addamiano, Arrigo and Manuel Aven.** Some properties of zinc sulfide crystals grown from the melt—36

**Adler, Robert and Glen Wade.** Beam refrigeration by means of large magnetic fields—1201

**Agarwal, Paul D. and D. C. Graham.** Effect of eddy currents on domain wall configurations, wall motion, and loss for a domain model of cube-on-edge material—249S

—— **and L. Rabins.** Rigorous solution of eddy current losses in rectangular bar for single plane domain wall model—246S

**Alger, R. S.** (see Jordan, R. D.)—747

**Allen, F. G., T. M. Buch, and J. T. Law.** $\phi$ layers on vacuum heated silicon—979

**Allen, R. B., H. Bernstein, and A. D. Kurtz.** Effect of oxide layers on the diffusion of phosphorus into silicon—334

**Allen, Robert D., Louis F. Glasier, Jr., and Paul L. Jordan.** Spectral emissivity, total emissivity, and thermal conductivity of molybdenum, tantalum, and tungsten above 2300°K—1382

**Alley, R. E., Jr. and V. E. Legg.** Effects of hydrostatic pressure on the properties of magnetic materials—239S

**Allison, F. E. and J. Thomas Schriempf.** Explosively loaded metallic cylinders. II—846

—— **and R. W. Watson.** Explosively loaded metallic cylinders. I—842

**Alperin, H. A.** Neutron diffraction investigation of the magnetic structure of nickel oxide—354S

**Amelinckx, S., G. Strumane, and W. W. Webb.** Dislocations in silicon carbide—1359

—— **and P. Delavignette.** Electron optical study of basal dislocations in graphite—2126

—— (see Delavignette, P.)—1691(L)

**Anderson, Elmer E. and J. Richard Cunningham, Jr.** High-permeability garnets—1687(L)

—— (see Cunningham, J. Richard, Jr.)—45S

—— (see McDuffie, G. E.)—47S

**Anderson, Franklin R. and V. F. Holland.** Ion-bombardment etching of synthetic fibers—1516

**Anderson, G. S. and G. K. Wehner.** Atom ejection patterns in single-crystal sputtering—2305

**Anderson, J. M.** Ultimate and secondary electron energies in the negative glow of a cold-cathode discharge in helium—511

—— **and L. A. Harris.** Negative glow plasma as a cathode for electron tubes—1463

**Andrä, W., Z. Málek, W. Schüppel, and O. Stemme.** "Spontaneous magnetic anisotropy" in polycrystalline thin films—442(L)

**Andrews, C. L.** Analog study of large-signal high-frequency diodes—1431

**Andrews, R. D.** (see Rudd, J. F.)—818

**Antell, G. R.** Chlorine and iodine as impurities in InAs and GaP—1686(L)

**Arajs, Sigurds and D. S. Miller.** Magnetic behavior of polycrystalline neodymium, holmium, and erbium from 300 to 1500°K—325S

—— **and D. S. Miller.** Paramagnetic susceptibilities of Fe and Fe-Si alloys—986

—— **and D. S. Miller.** Spontaneous magnetization of some gadolinium alloys—213(L)

**Arbogast, C. L.** (see Smith, J. F.)—99

**Armstrong, R. W., J. W. Faust, Jr., and W. A. Tiller.** Structural study of the compound $AgSbTe_2$—1954

**Arnold, George W.** (see Compton, W. Dale)—621

**Arnott, R. J.** (see Goodenough, J. B.)—342S

**Arrott, Anthony** (see Freeman, Michael W.)—404S

**Ashkin, A. and L. D. White.** Partition noise in electron beams at microwave frequencies—1351

**Asimow, Robert.** Precision lattice parameter measurements of cold-worked metals—410

**Atwater, H. A.** Microwave measurement of semiconductor carrier lifetimes—938(L)

**Auer, P. L.** Potential distributions in a low-pressure thermionic converter—2096

—— **and H. Hurwitz.** Positive column formation in ion sources employing surface ionization—1007

**Aukerman, L. W. and R. K. Willardson.** High-temperature Hall coefficient in GaAs—939(L)

**Auld, B. A.** Finite amplitude electromagnetic waves in gyromagnetic media—106S

—— Walker modes in large ferrite samples—1642

**Avakian, P. and A. Smakula.** Growth of cesium chloride crystals from solution and melt—1720

**Aven, Manuel** (see Addamiano, Arrigo)—36

**Bachmann, L., W. H. Orr, T. N. Rhodin, and B. M. Siegel.** Determination of surface structure using ultrahigh vacuum replication—1458

**Backus, John and Norman E. Huston.** Ion energies in a cold cathode discharge in a magnetic field—400

**Bacon, Roger.** Growth, structure, and properties of graphite whiskers—283

**Baer, G., D. Ganz, and H. Thomas.** Secondary recrystallization in vacuum annealed silicon iron—235S

**Bagley, E. B.** Hooke's law in shear and polymer melt fracture—1126(L)

—— **and A. M. Birks.** Flow of polyethylene into a capillary—556

**Bailey, H. R. and B. K. Larkin.** Remarks on "Some criteria for the *in situ* combustion of crude oil"—1123(L)

**Bailey, John M. and Allan T. Gwathmey.** Dislocation arrays in depth and recrystallization produced by surface deformation of single crystals of copper at high temperature—215(L)

**Bailey, P. C.** Absorption and reflectivity measurements on some rare earth iron garnets and $\alpha$-$Fe_2O_3$—39S

**Baker, G. S.** (see Gabrysh, A. F.)—1785

**Ballard, S. S.** (see McCarthy, Kathryn A.)—1410

**Balluffi, R. W. and R. O. Simmons.** Changes in macroscopic shape, lattice parameter, and density in crystals due to point defects—2284

**Barakat, Richard and Robert Barakat.** Optical studies of the diffraction of water waves by circular and thin elliptic cylinders—474

**Barakat, Robert** (see Barakat, Richard)—474

**Barbour, J. P.** (see Dyke, W. P.)—790

**Barker, R. C. and R. M. Brownell.** DC measurements on tape-wound cores—243S

**Barnes, Bentley T.** Intensities of $\lambda$1850 and $\lambda$2537 in low-pressure mercury vapor lamps with rare gas present—852

**Barr, L. W. and J. A. Morrison.** Formation of cavities on dislocations in crystals of NaCl and KCl—617(L)
**Bartell, L. S.** Effect of specimen delocalization in electron diffraction studies of gas molecules—252
**Bartholomew, C. Y. and A. R. LaPadula.** Penetration depth investigation of gas cleanup with radioactive tracers —445(L)
**Bartram, Ralph and Larry Spruch.** Bounds on the elements of the equivalent network for scattering in waveguides. II. Application to dielectric obstacles—913
—— (see Spruch, Larry)—905
**Batdorf, R. L., A. G. Chynoweth, G. C. Dacey, and P. W. Foy.** Uniform silicon *p-n* junctions. I. Broad area breakdown—1153
——, **G. C. Dacey, R. L. Wallace, and D. J. Walsh.** Esaki diode in InSb—613(L)
**Bate, G. and K. N. R. Taylor.** Production and properties of thin layers of indium antimonide—991
**Bate, R. T.** (see Simon, R.)—2160
**Bauer, Charles L. and Robert B. Gordon.** Dislocation damping effects in rock salt—945
**Bean, C. P. and I. S. Jacobs.** Magnetization of a dilute suspension of a multidomain ferromagnetic—1228
**Beck, Paul A.** (see Rajan, N. S.)—731
**Becker, J. H.** Several new methods to measure the thermal diffusivity of semiconductors—612(L)
**Bedo, D. E., D. H. Tomboulian, and J. A. Rigert.** Angular distribution and polarization of the radiation emitted by electrons accelerated in a synchrotron—2289
**Beers, D. S.** (see Abeles, B.)—1585
**Bell, James F.** Propagation of large amplitude waves in annealed aluminum—277
—— Study of initial conditions in constant velocity impact—2188
**Belov, K. P. and A. V. Pedko.** Magnetostriction of gadolinium iron garnets—55S
——, **G. I. Katayev, and R. Z. Levitin.** Internal friction anomaly in ferromagnetics and antiferromagnetics near the Curie point—153S
**Belser, Richard B.** Alloying behavior of thin bimetal films, simultaneously or successively deposited—562
**Bennett, A. I.** (see Longini, R. L.)—1204
**Bennett, Glenn E.** Harmonic generation in a ferrimagnetic disk—97S
**Bennion, David R.** New multi-aperture magnetic logic element—129S
**Berghammer, J. and S. Bloom.** On the nonconservation of noise parameters in multivelocity beams—454
**Berghezan, A.** (see Fourdeux, A.)—918
**Bergmann, Saul M.** Submillimeter wave maser—275
**Berman, R., E. L. Foster, B. Schneidmesser, and S. M. A. Tirmizi.** Effects of irradiation on the thermal conductivity of synthetic sapphire—2156
**Bernstein, H.** (see Allen, R. B.)—334
**Berry, Chester R. and Charles M. Combs.** Antiferromagnetic $FeVO_3$—1130(L)
**Bertolone, N. P.** (see Webb, W. W.)—207
**Besser, P. J.** (see Muckenhirn, William O.)—304S
**Beyer, R. T.** (see Proud, J. M.)—543
**Bickford, L. R., Jr.** Intrinsic and anneal-induced anisotropy in cobalt-substituted *W*-type hexagonal oxides—259S
**Bienvenue, L. L.** (see Sosin, A.)—249
**Bierlein, T. K. and B. Mastel.** Damage in $UO_3$ films and particles during reactor irradiation—2314(L)
—— **and B. Mastel.** Fission fragment damage in nonfissionable thin films—2315(L)
**Biorci, G., A. Ferro, and G. Montalenti.** Effect of neutron bombardment on the magnetic properties of very high permeability iron—2046
——, **A. Ferro, and G. Montalenti.** Magnetic viscosity due to solute atoms pairs. I. Theory of the effect—2121
**Bird, J. F.** (see McClure, F. T.)—884
**Birks, A. M.** (see Bagley, E. B.)—556
**Birks, L. S.** Technique for calculating x-ray intensities in the electron probe microanalyzer—1297(L)
—— (see Sweeney, W. E.)—1061
**Bjorklund, R. F.** (see Pao, Yoh-Han)—1925
**Blair, R. R.** (see Easley, J. W.)—1772
**Blakemore, J. S. and K. C. Nomura.** Influence of transverse modes on photoconductive decay in filaments—753
——, **J. W. Schultz, and K. C. Nomura.** Some effects occurring in dislocated tellurium—2226
**Blodgett, K. B. and T. A. Vanderslice.** Mechanism of inert gas cleanup in a gaseous discharge—1017
**Bloom, S.** (see Berghammer, J.)—454
**Bockemuehl, R. R.** Field-effect modulation of photoconductance in a quasi-intrinsic semiconductor—2255
—— **and W. E. Sargeant.** Practical hysteresigraph—180S
**Boerdijk, A. H.** Diagrams representing states of operation of a general thermocouple—1141
**Bohlmann, M. A.** (see Kronenberg, K. J.)—82S
**Bolef, D. I. and M. Menes.** Elastic constants of single crystal aluminum antimonide—1426
—— **and M. Menes.** Measurement of elastic constants of RbBr, RbI, CsBr, and CsI by an ultrasonic cw resonance technique—1010
**Boley, Forrest I.** Scattering of radiation by a plasma—1692(L)
**Bolling, G. F. and W. A. Tiller.** Growth from the melt. I. Influence of surface intersections in pure metals—1345
—— **and W. A. Tiller.** Growth from the melt. Part II. Cellular interface morphology—2040
**Bonfiglioli, G., A. Ferro, and A. Mojoni.** Origin of the "first-order structure" of CP4-etched Ge surfaces—684
**Borg, S. F.** Three-dimensional wedge impact on a compressible fluid—438(L)
**Boswell, F. W. C.** (see Fourie, J. T.)—1136(L)
**Boudart, M.** (see Koros, R. M.)—1129(L)
**Bovenkerk, H. P.** (see Strong, H. M.)—39
**Boyd, E. L.** (see Pugh, E. W.)—293S
**Bozorth, R. M. and D. D. Davis.** Magnetic properties of ferromagnetic superconductors—321S
**Brace, W. F.** (see Dulaney, E. N.)—2233
**Bradley, Arthur.** Determination of dose rates from beta transmission currents—1826(L)
—— (see Gross, B.)—1035
**Bradley, E. M. and M. Prutton.** Magnetization reversal in uniaxial films near to the preferred direction—285S
**Brady, L. E.** (see Hamilton, J. F.)—609(L)
**Bragg, Robert H., Irene Corvin, and John W. Buttrey.** Small angle scattering investigation of Ludox mixtures—1183
**Bragiński, Aleksander.** Properties of manganese ferrites prepared at various oxygen pressures—339S
**Brannen, E., H. Froelich, and T. W. W. Stewart.** Generation of millimeter waves by the electron beam of a microtron—1829(L)
**Bratina, W. J., U. M. Martius, and D. Mills.** Magnetic contribution to the ultrasonic attenuation in annealed and deformed steel (SAE 1020)—241S
**Brenden, B. B. and H. W. Newkirk.** Method for determining the thermal conductivity of incandescent solids—737(L)
**Brophy, J. E.** (see Kostyshyn, B.)—772
**Brophy, James J. and Robert J. Robinson.** Current noise due to ohmic contacts on cadmium sulfide—1343
**Broudy, R. M. and J. W. McClure.** Statistics of the occupation of dislocation acceptors (one-dimensional interaction statistics)—1511

**Brown, D. L.** (see Weisz, R. S.)—269S
**Brown, E. and G. H. Goedecke.** Effect of atomic interaction potential on defect production in metals—932
**Brown, Frederick C.** (see Hanson, Roland C.)—210(L)
**Brown, N.** (see Marcinkowski, M. J.)—1303(L)
**Brown, W. F., Jr., J. P. Hanton, and A. H. Morrish.** Initial-permeability spectra of microscopic iron-oxide particles—214S
**Brownell, R. M.** (see Barker, R. C.)—243S
**Brownlow, J. M., W. L. Shevel, Jr., and O. A. Gutwin.** Ferrite films—new logic and storage devices—i21S
**Brueckner, Keith A.** (see Klein, M. M.)—1437
**Bube, Richard H.** Mechanism of photoconductivity in microcrystalline powders—2239
—— Photoelectronic analysis of high-resistivity crystals: (a) GaAs, (b) $Sb_2S_3$—315
—— Saturation of photocurrent with light intensity—1301(L)
—— (see Williams, R.)—968
**Buch, T. M.** (see Allen, F. G.)—979
**Buehler, E. and M. Tanenbaum.** Method for the detection of flaws in yttrium iron garnet crystals—388
**Buffler, C. R.** Effects of surface irregularities on single crystal resonance parameters—222S
**Bugnolo, Dimitri S.** Transport equation for the spectral density of a multiple-scattered electromagnetic field—1176
**Bullough, R., R. C. Newman, J. Wakefield, and J. B. Willis.** Precipitation in silicon crystals containing aluminum—707
**Bunch, M. D.** (see Powell, Robert L.)—504
**Bundy, F. P.** (see Strong, H. M.)—39

**Cable, J. W.** (see Wilkinson, M. K.)—358S
**Caird, R. S.** (see Fowler, C. M.)—588
**Callen, Earl R.** Anisotropic magnetization—149S
**Campbell, A. W.** (see Davis, W. C.)—1225
**Cardona, M. and W. Ruppel.** Oscillations in germanium with an applied pulsed electric field—1826(L)
**Carr, P. H. and S. Foner.** Magnetic transitions in $Ti_2O_3$ and $V_2O_3$—344S
**Carr, W. J., Jr.** Explanation for the low-temperature behavior of the anisotropy of iron—69
**Carson, John W. and Robert L. White.** Paramagnetic resonance of Yb in aluminum and gallium garnets—53S
**Carter, J. R., Jr., and R. A. Swalin.** On the kinetics and mechanism of the precipitation of lithium from germanium —1191
**Carter, R. E.** (see Meiklejohn, W. H.)—164S
**Caspari, M. E., S. Frankel, and M. A. Gilleo.** Hyperfine interactions in magnetic materials by $\gamma$-$\gamma$ angular correlation measurements—320S
**Cassedy, E. S. and J. Fainberg.** Total electromagnetic cross sections of imperfectly conducting cylinders—739(L)
**Cassity, C. R.** Stress waves in solids—1377
**Castle, J. G.** (see Wagner, P. E.)—1498(L)
**Castro, P. S. and W. W. Happ.** Performance of a thermoelectric converter under constant heat flux operation—1314
**Catlin, Avery and Walter P. Walker.** Mechanical properties of thin single-crystal gold film—2135
**Cave, E. F. and L. V. Holroyd.** Thermal expansion coefficients of bismuth—1357
**Chace, William G. and Morton A. Levine.** Classification of wire explosions—1298(L)
**Chalmers, Bruce** (see Wagner, Richard S.)—578
**Champlin, Keith S.** Hall field relaxation in semiconductors at high frequency—1770
**Chang, H.** (see Shevel, W. L., Jr.)—125S
**Chang, K. K. N.** Theory of a negative-resistance transmission line amplifier with distributed noise generators—871
**Chang, Roger.** Creep of $Al_2O_3$ single crystals—484
**Charbonnier, F. M.** (see Dyke, W. P.)—790
**Chasanov, M. G.** Heating in liquid helium resulting from neutron and gamma bombardment by a fission source—733(L)
**Chen, C. L.** (see Leiby, C. C., Jr.)—268
**Cheng, C. H.** (see Schroder, K.)—2154
**Chester, P. F.** (see Wagner, J. E.)—1498(L)
**Chikazumi, Soshin.** Roll magnetic anisotropy of iron-aluminum crystals—158S
**Child, H. R.** (see Wilkinson, M. K.)—358S
**Chipman, D. R.** Temperature dependence of the Debye temperatures of aluminum, lead, and beta brass by an x-ray method—2012
—— **and Arthur Paskin.** Comments on "determination of atomic scattering factors"—1130(L)
**Chow, S. T.** (see Hsiao, C. C.)—1869
**Christenson, E. L.** (see Domenicali, C. A.)—1730
**Christy, Robert W.** Formation of thin polymer films by electron bombardment—1680
**Chu, E. L.** On the concept of fictitious surface charges of an electron beam—381
**Chynoweth, A. G.** Uniform silicon $p$-$n$ junctions. II. Ionization rates for electrons—1161
—— (see Batdorf, R. L.)—1153
**Cleek, G. W.** (see Spinner, S.)—1407
**Cleland, J. W.** (see Curtis, O. L., Jr.)—423
**Clogston, A. M.** Interaction of magnetic crystals with radiation in the range $10^4$-$10^5$ $cm^{-1}$—198S
**Closser, W. H.** Drift mobility in neutron irradiated $n$-type germanium—1693(L)
**Coale, Franklin S.** High-speed ferrite rotating half-wave plate—170S
**Cobine, J. D. and G. A. Farrall.** An experimental study of arc stability. I—2296
**Cody, G. D.** (see Abeles, B.)—1585
**Cohen, M. S., E. E. Huber, Jr., G. P. Weiss, and D. O. Smith.** Investigations into the origin of anisotropy in oblique-incidence films—291S
—— (see Smith, D. O.)—295S, 1755
**Coleman, Paul D. and Charles Enderby.** Megavolt electronics Cerenkov coupler for the production of millimeter and submillimeter waves—1695(L)
—— (see Steier, William H.)—99S
**Combs, Charles M.** (see Berry, Chester R.)—1130(L)
**Compton, W. Dale and George W. Arnold.** Lattice displacements by fast electrons—621
**Coomes, E. A.** (see Gifford, F. E.)—235
**Cooperman, Philip.** Reply to the letters of Szasz, and Bailey and Larkin—1124(L)
**Cormia, R. L.** (see Turnbull, D.)—674
**Cotter, L.** (see Meister, R.)—854
**Cowan, Monroe** (see Gordy, Walter)—941(L)
**Crapo, W. A.** Time decrease of initial permeability in $Mn_xFe_{3-x}O_{4-y}$—267S
**Crawford, J. H. and F. W. Young, Jr.** Mechanism for the production of $F$ centers in NaCl by irradiation with gamma rays—1688(L)
**Crocker, A. J.** (see Richards, J. L.)—611(L)
**Croft, William J.** (see Greifer, Aaron P.)—85
**Croll, I. M.** (see Greiner, J. H.)—2316(L)
**Cross, L. G.** (see Makhov, G.)—936(L)
**Culick, F. E. C.** Comments on a ruptured soap film—1128(L)
**Cunningham, J. Richard, Jr., and Elmer E. Anderson.** Samarium substitutions in yttrium iron garnet—45S
—— (see Anderson, Elmer E.)—1687(L)
—— (see McDuffie, G. E.)—47S
**Cunningham, R. L., P. Haymann, C. Lecomte, W. J. Moore, and J. J. Trillat.** Etching of surfaces with 8-kev argon ions—839

**Curtis, O. L., Jr., and J. W. Cleland.** Monoenergetic neutron irradiation of germanium—423
**Czyzak, S. J.** (see Reynolds, D. C.)—94

**Dacey, G. C.** (see Batdorf, R. L.)—613(L), 1153
**D'Amico, C.** (see Hagstrum, H. D.)—715
**Damon, R. W. and J. R. Eshbach.** Magnetostatic modes of a ferromagnetic slab—104S
**Danforth, W. E. and D. L. Goldwater.** Density of a thorium monolayer for maximum thermionic emission—1715
**Danielson, G. C.** (see Wallace, D. C.)—168
**Danno, Akibumi** (see Yahagi, K.)—734(L)
**Dash, W. C.** Gold induced climb of dislocations in silicon—2275
—— Improvements on the pedestal method of growing silicon and germanium crystals—736(L)
**Datz, Sheldon, R. E. Minturn, and E. H. Taylor.** Thermal positive ion emission and the anomalous flicker effect—880
—— (see Minturn, Robert E.)—871
**Davis, D. D.** (see Bozorth, R. M.)—321S
**Davis, D. H.** Monte Carlo calculation of molecular flow rates through a cylindrical elbow and pipes of other shapes—1169
**Davis, W. C. and A. W. Campbell.** Ultra-high-speed photographs refuting "cohesion in plasma"—1225
**Deckers, J.** (see Koros, R. M.)—1129(L)
**DeGrasse, R. W. and H. E. D. Scovil.** Noise temperature measurement of a traveling-wave maser preamplifier—443(L)
**Delavignette, P. and S. Amelinckx.** Dislocation ribbons and stacking faults in graphite—1691(L)
—— (see Amelinckx S.)—2126
**Della Torre, E.** (see Woodward, J. G.)—56, 398S
**dePackh, D. C.** (see Godlove, T. F.)—2016
**deVos, K. J.** (see Koch, A. J. J.)—75S
**Dexter, D. L.** (see Rimmer, M. P.)—775
**Diesel, T. J.** (see Hollander, Lewis E.)—692
**Dietrich, W. and W. E. Proebster.** Millimicrosecond magnetization reversal in thin magnetic films—281S
**Dillon, I. A. and R. M. Oman.** Ion-bombardment etching of silicon and germanium—26
**Dillon, J. F., Jr.** Magnetostatic modes in disks and rods—1605
—— **and J. W. Nielsen.** Ferrimagnetic resonance in impurity doped yttrium iron garnet (YIG)—43S
**Diorio, A. F.** (see Posner, A. S.)—536
**Dismant, John H.** Reviving the classical theory of friction by a modern dislocation theory of deformation revision—221(L)
—— Reviving the classical theory of friction by a modern dislocation theory of deformation revision—942(E)
**Dixon, P. A.** (see Maradudin, A. A.)—329S
**Domenicali, C. A. and E. L. Christenson.** Effects of internal oxidation and heat treatment on the electrical resistivity of dilute CuMn, CuFe, and CuCo alloys—1730
**Donahoe, F. J. and L. R. Testardi.** Experimental test of the first Kelvin relation—1304(L)
**Donovan, R. E. and A. A. Vuylsteke.** On the possibility of maser action in nuclear quadrupole systems—614(L)
**Dooley, J. A.** (see Easley, J. W.)—1024
**Dougal, Arwin A.** (see Takeda, Susumu)—412
**Dragsdorf, R. Dean.** Elastic moduli of face-centered cubic cobalt—434(L)
**Drickamer, H. G.** (see Gregg, D. W.)—494
—— (see Wiederhorn, S.)—1666
**Drougard, M. E.** Detailed study of switching current in barium titanate—352
**Dugan, Anthony F.** Contribution of anode emission to space charge in thermionic power converters—1397
**Dulaney, E. N. and W. F. Brace.** Velocity behavior of a growing crack—2233
**Dunlap, W. C.** (see Ruth, Ralph P.)—995
**Dunn, C. G. and C. J. McHargue.** On a complex recrystallization texture in 3% silicon iron—1767
—— **and J. L. Walter.** Orientation density and its use in quantitative texture studies—827
**Duwez, Pol, R. H. Willens, and W. Klement, Jr.** Continuous series of metastable solid solutions in silver-copper alloys—1136(L)
——, **R. H. Willens, and W. Klement, Jr.** Metastable electron compound in Ag-Ge alloys—1137(L)
——, **R. H. Willens, and W. Klement, Jr.** Metastable solid solutions in the gallium antimonide-germanium pseudobinary system—1500(L)
**Dyke, W. P., F. M. Charbonnier, R. W. Strayer, R. L. Floyd, J. P. Barbour, and J. K. Trolan.** Electrical stability and life of the heated field emission cathode—790
—— (see Martin, E. E.)—782

**Easley, J. W. and R. R. Blair.** Fast neutron bombardment of germanium and silicon Esaki diodes—1772
—— **and J. A. Dooley.** On the neutron bombardment reduction of transistor current gain—1024
**Eckstein, Yakov, A. W. Lawson, and Darrell H. Reneker.** Elastic constants of bismuth—1534
**Edmond, J. T.** Heat treatment of gallium arsenide—1428
—— **and C. Hilsum.** Heat treatment effects in indium arsenide—1300(L)
**Eggenberger, J. S.** Influence of nearby conductors in thin film switching—287S
**Eichbaum, Barlane R.** Development of high-speed coincident current memory cores—117S
**Einspruch, Norman G., E. J. Witterholt, and Rohn Truell.** Scattering of a plane transverse wave by a spherical obstacle in an elastic medium—806
**Elbaum, C.** Dislocations in metal crystals grown from the melt—1413
**Elliott, B. J., T. Schaug-Pettersen, and H. J. Shaw.** Pulsed ferrimagnetic microwave generator—400S
**Enderby, Charles** (see Coleman, P. D.)—1695(L)
**English, Albert C.** Detection of growth striations in germanium crystals—1498(L)
**Enz, U.** (see Smit, J.)—137S
**Eshbach, J. R.** (see Damon, R. W.)—104S
**Everhart, T. E.** Simple theory concerning the reflection of electrons from solids—1483
**Ewald, A. W.** (see Wolfson, R. G.)—1973
**Eyring, Henry** (see Gabrysh, A. F.)—1785
—— (see Kim, Wan Kyue)—358

**Fainberg, J.** (see Cassedy, E. S.)—739(L)
**Fan, George J. Y.** Analysis of a practical perpendicular head for digital purposes—402S
**Fang, P. H. and R. S. Roth.** Ferroelectric and ferrimagnetic properties of $(Ba_{6-2x}R_{2x})(Nb_{9-x}Fe_{1+x})O_{30}$—278S
**Farrall, G. A.** (see Cobine, J. D.)—2296
**Fatuzzo, Ennio.** Bias in ferroelectric colemanite—1029
**Faust, J. W., Jr., and A. Sagar.** Effect of the polarity of the III-V intermetallic compounds on etching—331
—— (see Armstrong, R. W.)—1954
**Ferro, A.** (see Biorci, G.)—2046, 2121
—— (see Bonfiglioli, G.)—684
**Fine, M. E.** (see Wolfson, R. G.)—1973
**Fisher, E. S.** (see McSkimin, H. J.)—1627
**Fisher, R. M.** (see Marcinkowski, M. J.)—1303(L), 1687(L)

**Flaschen, S. S., A. David Pearson, and I. L. Kalnins.** Improvement of semiconductor surfaces by low melting glasses, possibly functioning as ion getters—431(L)
——, **A. David Pearson, and William R. Northover.** Low melting sulfide-halogen inorganic glasses—219(L)
**Fletcher, P. C.** (see Solt, I. H.)—100S
**Fletcher, R. C.** (see LeCraw, R. C.)—95S
**Flippen, R. B. and S. A. Friedberg.** Magnetic susceptibilities of single crystal $NiCl_2 \cdot 6H_2O$ and $CoCl_2 \cdot 6H_2O$ at low temperatures—338S
**Flom, Donald G.** Rolling friction of polymeric materials. I. Elastomers—306
**Floyd, R. L.** (see Dyke, W. P.)—790
**Fochs, P. D.** Improved method of growing CdS crystals from the vapor phase—1733
**Folen, V. J.** Influence of ionic order on the magnetocrystalline anisotropy and crystalline field parameters in lithium ferrite monocrystals—166S
—— (see Rado, G. T.)—62
—— (see Schnitzler, A. D.)—348S
**Foner, S. and L. R. Momo.** CW millimeter wave maser using $Fe^{3+}$ in $TiO_2$—742(L)
—— (see Carr, P. H.)—344S
—— (see Momo, L. R.)—443(L)
**Ford, N. C., Jr.** Domain wall velocities in thin iron-nickel films—300S
**Foster, E. L.** (see Berman, R.)—2156
**Foster, K. and J. J. Kramer.** Effect of directional orientation on the magnetic properties of cube-oriented magnetic sheets—233S
—— (see Pavlovic, D.)—231S
**Fotland, Richard A.** Some electrical properties of amorphous selenium films—1558
**Fourdeux, A., A. Berghezan, and W. W. Webb.** Stacking faults in zinc—918
**Fourie, J. T., F. Weinberg, and F. W. C. Boswell.** Preparation of tin single crystals for transmission electron microscopy—1136(L)
—— **and H. G. F. Wilsdorf.** The production of dislocation loops by a combined climb and glide mechanism—2219
**Fowler, C. A., Jr., E. M. Fryer and David Treves.** Observation of domains in iron whiskers under high fields—2267
**Fowler, C. M., W. B. Garn, and R. S. Caird.** Production of very high magnetic fields by implosion—588
**Fowles, G. R.** Attenuation of the shock wave produced in a solid by a flying plate—655
**Foy, J. E. and R. J. Parker.** Permanent magnet leakage permeance evaluation based on polar radiation analogy—188S
**Foy, P. W.** (see Batdorf, R. L.)—1153
**Frank, F. C. and M. B. Ives.** Orientation-dependent dissolution of germanium—1996
**Frank, R. C. and J. E. Thomas, Jr.** Germanium crystals grown from hollow cylindrical seeds—1689(L)
**Frankel, S.** (see Caspari, M. E.)—320S
**Frankl, D. R.** Surface space-charge calculations for semiconductors—1752
**Freeman, A. J. and R. E. Watson.** Effect of crystalline fields on magnetic form factors—374S
**Freeman, Michael W. (M.D.), Anthony Arrott, and John H. L. Watson.** Magnetism in medicine—404S
**Freitas, L. G.** (see Mascarenhas, S.)—1684
**Freudenthal, A. M.** Prediction of fatigue life—2196
—— Thermal stress analysis and Grueneisen's relation—434(L)
**Friedberg, S. A.** (see Flippen, R. B.)—338(S)
**Frisch, H. L.** (see Morrison, J. A.)—1621
**Froelich, H.** (see Brannen, E.)—1829(L)
**Fryer, E. M.** (see Fowler, C. A., Jr.)—2267
**Fuller, C. S.** (see Whelan, J. M.)—1507(L)
**Fuller, Harrison W. and Murray E. Hale.** Determination of magnetization distribution in thin films using electron microscopy—238
—— **and Murray E. Hale.** Domains in thin magnetic films observed by electron microscopy—1699
—— **and Murray E. Hale.** Static and dynamic studies of magnetization distribution in thin films by electron microscopy—308S
—— (see Rubinstein, Harvey)—437(L)

**Gabrysh, A. F., H. Eyring, M. E. Wadsworth, G. S. Baker, and T. Ree.** Study of irradiation effects and the $H^2+H^2$ buildup in tantalum—1785
**Gaines, George L., Jr.** Backscattering of carbon-14 beta radiation—741(L)
**Ganz, D.** (see Baer, G.)—235S
**Garn, W. B.** (see Fowler, C. M.)—588
**Garvin, H. L., W. B. Teutsch, and R. W. Pidd.** Generation of alternating current in the cesium cell—1508(L)
**Gatos, Harry C. and Mary C. Lavine.** Dislocation etch pits on the {111} and {$\bar{1}\bar{1}\bar{1}$} surfaces on InSb—743(L)
——, **P. L. Moody, and M. C. Lavine.** Growth of InSb crystals in the (111) polar direction—212(L)
—— (see Moody, P. L.)—1696(L)
—— (see Warekois, E. P.)—1302(L)
**Gazza, George E.** (see Tarpinian, A.)—1657
**Geil, P. H.** (see Reneker, D. H.)—1916
**Geiszler, T. D. and R. A. Henschke.** Broadband reciprocal ferrite phase shifters—174S
**Geller, S.** Magnetic interactions and distribution of ions in the garnets—30S
**Germer, L. H. and C. D. Hartman.** Oxygen in nickel—2085
**Gerritsen, H. J., S. E. Harrison, and H. R. Lewis.** Chromium-doped titania as a maser material—1566
—— **and H. R. Lewis.** Operation of a chromium-doped titania maser—608(L)
**Gerson, Robert.** Dielectric properties of lead titanate zirconate ceramics at very low frequencies—1615
—— Variation in ferroelectric characteristics of lead zirconate titanate ceramics due to minor chemical modifications—188
**Gibson, Edward F.** (see Powell, Robert L.)—504, 1221
**Gifford, F. E. and E. A. Coomes.** Torsion induced recrystallization of molybdenum and tungsten filaments—235
**Gilfrich, John V.** (see Hubbard, William M.)—368S
**Gilleo, M. A.** (see Caspari, M. E.)—320S
**Gilman, J. J.** Terraces on etchpits—936(L)
—— Direct measurements of the surface energies of crystals—2208
—— **and W. G. Johnston.** Behavior of individual dislocations in strain-hardened LiF crystals—687
—— (see Johnston, W. G.)—632
**Giordmaine, J. A. and T. C. Wang.** Molecular beam formation by long parallel tubes—463
**Giron, V. S.** (see Néel, L.)—27S
**Gjevre, J. A.** (see Smith, J. F.)—645
**Glasier, Louis F.** (see Allen, R. D.)—1382
**Godlove, T. F. and D. C. dePackh.** Adiabatic collapse of a relativistic electron beam—2016
**Goedecke, G. H.** (see Brown, E.)—932
**Goetzberger, A.** Uniform avalanche effect in silicon three-layer diodes—2260
—— **and W. Shockley.** Metal precipitates in silicon $p$-$n$ junctions—1821
**Goldring, G., M. Schieber, and Z. Vager.** On the incorporation of neodymium in mixed yttrium-neodymium-iron garnets—2057

**Goldstein, Martin.** Depolarized components of light scattered by glasses. II. Influence of nonannealable strains on the scattering—1697(E)
**Goldwater, D. L.** (see Danforth, W. E.)—1715
**Goodenough, John B.** Direct cation-cation interactions in primarily ionic solids—359S
——, **A. Wold, and R. J. Arnott.** Interpretation of the magnetic and crystallographic properties of several iron, nickel, and iron-nickel nitrides—342S
**Gordon, E. I.** Charged-particle orbits in varying magnetic fields—1187
**Gordon, Robert B.** (see Bauer, C. L.)—945
**Gordy, Walter and Monroe Cowan.** Proposed molecular amplifier and coherent generator for millimeter and submillimeter waves—941(L)
**Gorton, H. C.** (see Wieber, R. H.)—608(L)
**Gossard, A. C.** (see Portis, A. M.)—205S
**Gosselin, C. M.** (see Grosskreutz, J. C.)—1127(L)
**Gossick, B. R.** Correlation between certain extinction bands of solids and plasma resonance—650
—— Dipole mode of minority carrier diffusion with reference to point contact rectification—29
—— Optical absorption by free carriers in a semiconductor containing a dispersed colloidal phase—648
—— Transistor with base containing a dispersed colloidal phase—745(L)
**Gottlieb, Peter.** Double pump degenerate ferrite amplifier —172S
—— Nonlinear effects of crystalline anisotropy on ferromagnetic resonance—2059
**Graham, C. D., Jr.** Temperature dependence of anisotropy and saturation magnetization in iron and iron-silicon alloys —150S
**Graham, D. C.** (see Agarwal, P. D.)—249S
**Graham, R. A.** Depth of indentation on an impacting projectile—619(L)
**Granath, J. A.** Instrumentation applications of inverse-Wiedemann effect—178S
**Gray, Glenn A.** Single-velocity equivalents for multivelocity electron streams—370
**Green, J. J.** (see Schlömann, E.)—385S
**Greenberg, J. Mayo.** Scattering by nonspherical particles —82
**Greenler, Robert G. and William S. Rothwell.** Ductility of NaCl crystals—616(L)
**Gregg, D. W. and H. G. Drickamer.** Effect of pressure on phosphor decay—494
**Greifer, Aaron P. and William J. Croft.** Rectangular hysteresis loop ferrites with large Barkhausen steps—85
**Greiner, J. H., I. M. Croll, and M. Sulich.** Ferromagnetic-antiferromagnetic interaction in Fe-FeS—2316(L)
**Griffiths, V.** (see Saimoto, S.)—1693(L)
**Gross, Bernhard, Arthur Bradley, and Arthur P. Pinkerton.** Beta particle transmission currents in solid dielectrics —1035
**Gross, K. A.** (see Weaver, C. W.)—626
**Grosskreutz, J. C. and C. M. Gosselin.** Surface deformation of aluminum in fatigue—1127(L)
**Grover, G. M.** (see Ranken, W. A.)—2140
**Gumnick, J. L. and D. W. Juenker.** Field dependence of photoelectric emission from tantalum—102
**Gutwin, O. A.** (see Brownlow, J. M.)—121S
**Gwathmey, Allan T.** (see Bailey, John M.)—215(L)
—— (see Young, F. W., Jr.)—225
**Gyorgy, E. M.** Flux reversal in soft ferromagnetics—110S
—— **and F. B. Hagedorn.** Interaction between high-power microwave losses and magnetic flux reversal—1775
—— (see Hagedorn, F. B.)—398S
**Haas, George A. and John T. Jensen, Jr.** Thermionic properties of UC—1231
**Hagedorn, F. B. and E. M. Gyorgy.** Switching behavior of low-remanence ferrite—398S
—— (see Gyorgy, E. M.)—1775
**Hagstrum, Homer D.** Detection of metastable atoms and ions—897
—— **and C. D'Amico.** Production and demonstration of atomically clean metal surfaces—715
**Hakeem, M. A. and Harry S. Robertson.** Alkali vapor plasmas—2063(L)
**Hale, Murray E.** (see Fuller, Harrison W.)—238, 308S, 1699
—— (see Rubinstein, Harvey)—437(L)
**Hall, R. C.** Magnetic anisotropy and magnetostriction of ordered and disordered cobalt-iron alloys—157S
—— Single-crystal magnetic anisotropy and magnetostriction studies in iron-base alloys—1037
**Hall, William J.** (see Powell, Robert L.)—496
**Ham, Joe S.** Kinetic theory of thermal diffusion in dilute polymer solutions—1853
**Hames, F. A.** Ferromagnetic alloy phases near the compositions $Ni_2MnIn$, $Ni_2MnGa$, $Co_2MnGa$, $Pd_2MnSb$, and PdMnSb—370S
**Hamilton, D. R.** Interferometric determination of twist and polytype in silicon carbide whiskers—112
—— **and R. G. Seidensticker.** Propagation mechanism of germanium dendrites—1165
**Hamilton, J. F. and L. E. Brady.** Print-out process in photographic emulsion grains—609(L)
**Haneman, D.** Behavior of InSb surfaces during heat treatment—217(L)
**Hanes, G. R.** A multiple tube collimator for gas beams—2171
**Hanson, Roland C. and Frederick C. Brown.** Hall mobility of holes in AgBr—210(L)
**Hanton, J. P.** (see Brown, W. F.)—214S
**Happ, W. W.** (see Castro, P. S.)—1314
**Harada, Roy** (see McCaldin, J. O.)—2065(L)
**Harden, James L.** (see Powell, Robert L.)—1221
**Harker, K. J.** Determination of electrode shapes for axially symmetric electron guns—2165
**Harris, A. B.** (see Meyer, Horst)—49S
**Harris, C. C.** Alternative forms of some exponential and power functions for graphical representation—215(L)
—— Alternative forms of some exponential and power functions for graphical representation—942(E)
**Harris, L. A.** (see Anderson, J. M.)—1463
**Harrison, Don E., Jr.** (see Yonts, O. C.)—447, 1583
**Harrison, S. E.** (see Gerritsen, H. J.)—1566
**Hart, Philip J.** Effect of gas pressure and cone angle on the velocities of electrically excited shock waves—436(L)
**Hart, R. W.** (see McClure, F. T.)—884
**Harte, K. J.** Flux reversal by noncoherent rotation in magnetic films—283S
**Hartman, C. D.** (see Germer, L. H.)—2085
**Haszko, S. E.** (see Wolfe, R.)—1959
**Haymann, P.** (see Cunningham, R. L.)—839
**Haynes, A. and C. C. Hsiao.** Effect of temperature and reactor irradiation on the strength of biaxially oriented polyethylene terephthalate—1871
**Heffner, H. and G. Wade.** Noise figure and gain of parametric converters—2316(L)
**Heidenreich, R. D.** (see Nesbitt, E. A.)—228S
**Heikes, Robert R.** (see McGuire, Thomas R.)—276S
—— (see Sherman, B.)—1
**Heimke, G.** Temperature dependence of the saturation magnetization of ferrites with magnetoplumbite structure—271S

**Helmer, J. C., F. B. Jacobus, and P. A. Sturrock.** Focusing molecular beams of $NH_3$—458
**Hendricks, C. D.** (see Shelton, H.)—1243
**Henry, Irvin G.** Phase oscillations in high current synchrotrons—1338
**Henry, Warren E.** Strong field magnetization at low temperatures and approach to absolute saturation of thulium metal—323S
**Henschke, R. A.** (see Geiszler, T. D.)—174S
**Herring, Conyers.** Effect of random inhomogeneities on electrical and galvanomagnetic measurements—1939
—— State of *d* electrons in transition metals—3S
**Hershberger, W. D.** Absorption and reflection spectrum of a plasma—417
**Heuer, A.** (see Straley, R.)—126S
**Hickmott, T. W.** Interaction of atomic hydrogen with glass—128
**Hill, R. M. and S. K. Ichiki.** Microwave noise from low-pressure arcs—735(L)
**Hilsum, C.** (see Edmond, J. T.)—1300(L)
**Hirai, Nishio** (see Kim, Wan Kyue)—358
**Hirsch, R. L.** Effect of interelectrode spacing on cesium thermionic converter performance—2064(L)
**Hoffman, L. C.** (see Statton, W. O.)—404
**Hoffman, R. W.** (see Yelon, Arthur)—1672
**Hokkeling, P.** (see Koch, A. J. J.)—75S
**Holden, F. C., J. B. Melehan, H. R. Ogden, and R. I. Jaffee.** Formation and initial growth of single-asperity solid-state bonds—670
**Holland, V. F.** (see Anderson, F. R.)—1516
**Hollander, Lewis E. and T. J. Diesel.** Piezoresistive effect in *p*-type PbTe—692
**Holmes, D. K. and G. Leibfried.** Range of radiation induced primary knock-ons in the hard core approximation—1046
**Holroyd, L. V.** (see Cave, E. F.)—1357
**Holt, D. B.** Filled and empty dangling bonds in III–V compounds—2231
**Holwech, Ivar.** Recovery of internal friction in aluminum after plastic deformation—928
**Hooper, E. T., Jr.** (see Krall, A. D.)—178S
**Hoskins, R. H. and R. C. Pastor.** Charred dextrose as a paramagnetic resonance standard—1506(L)
**Houston, B. B. and Marriner K. Norr.** Dislocation etch pits on *p*-type lead telluride—615(L)
**Hsiao, C. C. and S. T. Chow.** Effect of reactor irradiation on the tensile strength of uniaxially oriented polyethylene terephthalate—1869
—— (see Haynes, A.)—1871
—— (see Robinson, A.)—1602
**Hsu, Hwei-Piao.** Aperture fields in the diffraction by a slit—1742
—— (see Plonsey, Robert)—445(E)
**Hubbard, William M., Edmond Adams, and John V. Cuffrich.** Magnetic moments of alloys of gadolinium with some of the transition elements—368S
**Huber, E. E.** (see Cohen, M. S.)—291S
—— (see Smith, D. O.)—295S
**Hughes, F. L.** (see Matarrese, L. M.)—2063(L)
**Hung, John Wenchung.** Transfer function and error probability of a digital magnetic tape recording system—396S
**Hurwitz, H.** (see Auer, P. L.)—1007
**Huston, Norman E.** (see Backus, John)—400
**Huyett, M. J.** (see Lundberg, J. L.)—1131(L)
**Hyndman, D. and G. F. Origlio.** NMR absorption in Teflon fibers—1849

**Ichiki, S. K.** (see Hill, R. M.)—735(L)
**Iida, Shuichi.** Role of cation vacancy in magnetic annealing of iron-cobalt ferrites—251S
**Irving, B. A.** Shapes of etch hillocks and pits and their correlation with measured etch rates—109
**Itoh, T. and Musha, T.** Monte Carlo calculations of the motions of electrons in helium—744(L)
**Itzkan, I.** Solutions of the equations of space charge flow for radial flow between concentric spherical electrodes—652
**Ives, M. B.** (see Frank, F. C.)—1996

**Jacobs, I. S.** High field magnetization study of ferrimagnetic arrangements in chromite spinels—263S
—— **and P. E. Lawrence.** Exchange anisotropy memory effect—1388
—— (see Bean, C. P.)—1228
**Jacobus, F. B.** (see Helmer, J. C.)—458
**Jaffe, L. D.** (see Martens, H. E.)—1122(L)
**Jaffee, R. I.** (see Holden, F. C.)—670
**Janes, Sargent G. and H. Koritz.** Numerical calculation of absolute bremsstrahlung intensity for a fully ionized dissociated hydrogenic gas—525
**Jelley, J. V.** Time discrimination in solid-state infrared quantum counters—1145
**Jensen, John T., Jr.** (see Haas, George A.)—1231
**Jensen, R. V.** (see Rosi, F. D.)—1105
**Johnson, Curtis C.** Theory of fast-wave parametric amplification—338
**Johnston, W. G. and J. J. Gilman.** Dislocation multiplication in lithium fluoride crystals—632
—— (see Gilman, J. J.)—687
**Jones, R. V.** (see Rodrigue, G. P.)—376S
**Jordan, Paul L.** (see Allen, Robert D.)—1382
**Jordan, R. D. and R. S. Alger.** Specific ionization measurements and energy requirements for *F*-center formation—747
**Joseph, L.** (see Tompkins, J. E.)—176S
**Juenker, D. W.** (see Gumnick, J. L.)—102
**Juretschke, H. J.** Electromagnetic theory of dc effects in ferromagnetic resonance—1401

**Kalnins, I. L.** (see Flaschen, S. S.)—431(L)
**Kaminow, I. P.** Volume dependence of ferrimagnetic resonance properties in $Ni_{1-x}Co_xFe_2O_4$—220S
**Kanamori, Junjiro.** Crystal distortion in magnetic compounds—14S
**Kane, B.** (see Straley, R.)—126S
**Kaplan, T. A.** Classical theory of spin configurations in the cubic spinel—364S
**Karal, Frank C., Jr.** (see Keller, J. B.)—1039
**Katayev, G. I.** (see Belov, K. P.)—153S
**Katz, J. M.** (see Seiden, P. E.)—1291
**Keedy, D. A., J. Powers, and R. S. Stein.** Theoretical calculation of the birefringence of polypropylene crystals—1911
**Keh, A. S.** Dislocation networks in a low-alloy steel—1501(L)
—— Dislocations in indented magnesium oxide crystals—1538
**Keller, Joseph B. and Frank C. Karal, Jr.** Surface wave excitation and propagation—1039
**Kelley, Clinton M.** (see Wiechec, Walter)—131S
**Kelley, R. H.** (see Kulp, B. A.)—1057
**Kelly, Donald and Henry Margenau.** High-frequency breakdown of air—1617
**Kennedy, David P.** Minority carrier current in a linearly graded drift field—218(L)
—— Minority carrier recombination in a cylindrical transistor base region—954
—— Spreading resistance in cylindrical semiconductor devices—1490
**Kerr, John T.** (see Todd, Johnson B.)—51

**Kerwin, Larkin and Paul Marmet.** Recent appearance potential measurements using an electrostatic electron selector—2071
**Kilkson, Rein** (see Toth, R. S.)—1117
**Killeen, J. and B. A. Lippmann.** Circuit dynamics of the pinch—1549
**Kim, Wan Kyue, Nishio Hirai, Taikyue Ree, and Henry Eyring.** Theory of non-Newtonian flow. III. Method for analyzing non-Newtonian flow curves—358
**Kingery, W. D.** Regelation, surface diffusion, and ice sintering—833
—— **and M. P. Lepie.** Solution-precipitation deformation under an applied stress—610(L)
**Kino, G. S.** Parametric amplifier theory for plasmas and electron beams—1449
**Kirk, E. S.** (see Smith, Mac J.)—1504(L)
**Kirschbaum, Albert J.** (see Sparks, Joseph T.)—356S
**Kiseda, J. R.** (see Seelbach, W. C.)—135S
**Kittel, C.** Microwave resonance in rare earth iron garnets—11S
**Kleber, E. V.** (see Vickery, R. C.)—366S
**Klein, Milton M. and Keith A. Brueckner.** Plasma propulsion by a rapidly varying magnetic field—1437
**Kleinman, D. A. and A. L. Schawlow.** Corbino disk—2176
**Klement, W., Jr.** (see Duwez, Pol)—1136(L), 1137(L), 1500(L)
**Knechtli, R. C. and R. D. Weglein.** Diode capacitors for parametric amplification—1134(L)
**Koch, A. J. J., P. Hokkeling, M. G. v.d. Steeg, and K. J. deVos.** New material for permanent magnets on a base of Mn and Al—75S
**Koehler, W. C.** (see Wilkinson, M. K.)—358S
**Kohler, Dale.** Promotion of cubic grain growth in 3% silicon iron by control of annealing atmosphere composition—408S
**Kolbe, C. L. and D. L. Martin.** Hot working of Alnico 5 alloys—84S
**Kondorsky, E. I. and V. L. Sedov.** Antiferromagnetism of iron in face-centered crystalline lattice and the causes of anomalies in Invar physical properties—331S
**Kooi, C. F.** (see Seiden, P. E.)—1291
**Koritz, H.** (see Janes, Sargent G.)—525
**Koros, R. M., J. Deckers, and M. Boudart.** More experiments on liquid films—1129(L)
**Kostelec, Joze.** Reciprocity law failure in ZnO and Se—441(L)
**Kostyshyn, B., J. E. Brophy, I. Oi, and D. D. Roshon, Jr.** External fields from domain walls of cobalt film—772
**Kouvel, J. S.** Exchange anisotropy in Cu-Mn and Ag-Mn alloys—142S
—— (see Pry, R. H.)—162S
**Krall, A. D. and E. T. Hooper, Jr.** Ferromagnetic powders in waveguides at elevated temperatures—178S
**Kramer, J. J.** (see Foster, K.)—233S
**Kronenberg, K. J.** Transmission electron diffraction of Alnico V—80S
—— **and M. A. Bohlmann.** Long-term magnetic stability of Alnico and barium ferrite magnets—82S
**Kuczynski, G. C.** Anomalous thermionic emission from UC and $(ZrC)_{0.5}(UC)_{0.5}$—1500(L)
**Kuhlmann-Wilsdorf, Doris, and H. G. F. Wilsdorf.** On the behavior of thermal vacancies in pure aluminum—516
**Kulp, B. A. and R. H. Kelley.** Displacement of the sulfur atom in CdS by electron bombardment—1057
**Kurtz, A. D. and R. Yee.** Diffusion of boron into silicon—303
—— (see Allen, R. B.)—334

**LaBonte, A. E.** (see Muckenhirn, William O.)—304S
**Lad, R. A.** (see Stearns, C. A.)—231
**Ladell, J.** (see Spielberg, N.)—1660
**Lalevic, Bogoljub.** Criteria for the choice of a superconducting bolometer—1234
**Lambe, J.** (see Makhov, G.)—936(L)
**Landauer, Rolf.** Parametric amplification along nonlinear transmission lines—479
**Landel, Robert F. and Paul J. Stedry.** Stress as a reduced variable: stress relaxation of SBR rubber at large strains—1885
**LaPadula, A. R.** (see Bartholomew, C. Y.)—445(L)
**Larkin, B. K.** (see Bailey, H. R.)—1123(L)
**Larrabee, R. D. and M. C. Steele.** Oscillistor—new type of semiconductor oscillator—1519
**Lauriente, M. and G. E. Lynn.** Characteristics of Supermendur at 500°C—237S
**Lavine, Mary C.** (see Gatos, Harry C.)—212(L), 743(L)
—— (see Moody, P. L.)—1696(L)
—— (see Warekois, E. P.)—1302(L)
**Law, J. T.** (see Allen, F. G.)—979
**Lawrence, P. E.** (see Jacobs, I. S.)—1388
—— (see Rodbell, D. S.)—275S
**Lawson, A. W.** (see Eckstein, Y.)—1534
**Lecomte, C.** (see Cunningham, R. L.)—839
**Leder, Lewis B. and J. A. Suddeth.** Characteristic energy losses of electrons in carbon—1422
**LeCraw, R. C., R. C. Fletcher, and E. G. Spencer.** Electron spin relaxation in ferromagnetic insulators—95S
**Lee, C. A. and G. Kaminsky.** Anomalous barrier capacitance in $p$-$n$ junctions of InSb—1717
**Lee, T. H.** Energy distribution and cooling effect of electrons emitted from an arc cathode—924
**Legg, V. E.** (see Alley, R. E.)—239S
**Leibfried, G.** Defects in dislocations produced by focusing collisions in fcc lattices—117
—— (see Holmes, D. K.)—1046
**Leiby, C. C., Jr., and C. L. Chen.** Diffusion coefficients, solubilities, and permeabilities for He, Ne, $H_2$ in Vycor glass—268
**Leliak, P.** Manipulation of cesium—609(L)
**Lepie, M. P.** (see Kingery, W. D.)—610(L)
**Levengood, W. C. and T. S. Vong.** Spiral dislocations on glass fracture surfaces—1416
**Levi, E. P.** Permanent magnets obtained by drawing compacts of parallel iron wires—1469
**Levi, Leo.** Response of a loaded idealized piezoelectric plate to an electric signal—1237
**Levine, H. S. and C. J. MacCallum.** Grain boundary and lattice diffusion in polycrystalline bodies—595
**Levine, Morton A.** (see Chace, William G.)—1298(L)
**Levitin, R. Z.** (see Belov, K. P.)—153S
**Lewis, H. R.** (see Gerritsen, H. J.)—608(L), 1566
**Lewis, H. W. and J. R. Reitz.** Efficiency of the plasma thermocouple—723
**Li, James C. M. and Charles D. Needham.** Some elastic properties of a screw dislocation wall—1318
**Lichtman, David.** Use of the omegatron in the determination of parameters affecting limiting pressures in vacuum devices—1213
**Lin, S. T.** Magnetic behavior in the transition region of a hematite single crystal—273S
**Lindemann, W. W. and R. K. Mueller.** Grain-boundary photoresponse—1746
**Lineweaver, Jack L.** (see Todd, B. Johnson)—51
**Lippmann, B. A.** (see Killeen, J.)—1549
**Litovitz, T.** (see Meister, R.)—854
**Little, Warren J. and Kathryn A. McCarthy.** On the observation of macroscopic spirals on gallium arsenide surfaces—1298(L)
**Livingston, J. D.** Etch pits at dislocations in copper—1071
**Logan, R. A. and A. J. Peters.** Impurity effects upon mobility in silicon—122

**Long, T. R.** Electrodeposited memory elements for a nondestructive memory—123S
**Longini, R. L., A. I. Bennett, and W. J. Smith.** Growth of atomically flat surfaces on germanium dendrites—1204
**Lotgering, F. K.** (see Smit, J.)—137S
**Lothe, Jens.** Theory of dislocation climb in metals—1077
**Lougher, E. H.** (see Simon, R.)—2160
**Low, J. R., Jr.** (see Stein, Dale F.)—362
**Luborsky, F. E. and T. O. Paine.** Angular variation of the magnetic properties of elongated single-domain iron particles—66S
—— **and T. O. Paine.** Coercive force and remanence of 25 A to 2000 A diameter cobalt, iron, and iron-cobalt alloy—68S
—— (see Paine, T. O.)—78S
**Lucovsky, Gerald.** Photoeffects in nonuniformly irradiated $p$-$n$ junctions—1088
**Lundberg, J. L., M. B. Wilk, and M. J. Huyett.** Solubilities and diffusivities of nitrogen in polyethylene—1131(L)
**Lurio, A. and E. Stern.** Dielectric behavior of single crystals of tri-glycine sulfate (TGS) from 1 kc to 2500 Mc—1125(L)
—— **and E. Stern.** Measurements of the dielectric constant of $BaTiO_3$ single crystals in the paraelectric region at X band—1805
**Lynn, G. E.** (see Lauriente, M.)—237S

**MacCallum, C. J.** (see Levine, H. S.)—595
**Macrakis, Michael S.** Theoretical and experimental study of the back-scattering cross section of an infinite ribbon—2261
**Mader, Charles L.** (see Zinn, John)—323
**Maiman, T. H.** Maser behavior: temperature and concentration effects—222(L)
**Maissel, Leon.** Thermal expansion of silicon—211(L)
**Makhov, G., L. G. Cross, R. W. Terhune, and J. Lambe.** Effect of nuclear polarization on the behavior of solid state masers—936(L)
**Makolagwa, Stefan.** Effect of potassium ions on the reaction and final properties of Mn-Zn ferrite—339S
**Málek, Z.** (see Andrä, W.)—442(L)
**Mandelkern, L.** (see Posner, A. S.)—536
**Maradudin, A. A. and P. A. Dixon.** Effect of impurities on the low-temperature spontaneous magnetization of cubic ferromagnetic crystals—329S
**Marcinkowski, M. J. and R. M. Fisher.** Direct observation of antiphase domain boundaries in the $AuCu_3$ superlattice—1687(L)
——, **R. M. Fisher, and N. Brown.** Direct observation of superdislocations in a superlattice—1303(L)
**Margenau, Henry** (see Kelly, D.)—1617
**Marhoeffer, C. J.** (see Meister, R.)—854
**Marinace, John C.** (see Ruth, Ralph P.)—995
**Maringer, R. E.** Effects of directional ordering on the damping of zone-melted iron—229S
**Marmet, Paul** (see Kerwin, Larkin)—2071
**Marsh, S. P.** (see McQueen, R. G.)—1253
**Marshall, S. A. and A. R. Reinberg.** Paramagnetic resonance absorption of nickel in sapphires—336S
**Marshall, Walter** (see Sparks, Joseph T.)—356S
**Martens, H. E. and L. D. Jaffe.** Tensile strength of pyrolytic graphite up to 2750°C—1122(L)
**Martin, D. L.** (see Kolbe, C. L.)—84S
**Martin, Don S., Jr.** (see Reade, Richard F.)—1965
**Martin, E. E., J. K. Trolan, and W. P. Dyke.** Stable, high density field emission cold cathode—782
**Martin, Edward A.** Experimental investigation of a high-energy density, high-pressure arc plasma—255
**Martin, Stanley B.** Simple radiant heating method for determining the thermal diffusivity of cellulosic materials—1101
**Martius, U. M.** (see Bratina, W. J.)—241S
**Mascarenhas, S. and Freitas, L. G.** Influence of crystallographic orientation on the charge formation during phase changes in solids—1684
**Mason, Peter.** Longitudinal wave propagation in stretched polymers—1706
**Mastel, B.** (see Bierlein, T. K.)—2314(L), 2315(L)
**Masters, Joseph I.** Instability of magnetic resonance in single crystal spheres of yttrium iron garnet—41S
**Matarrese, L. M. and F. L. Hughes.** Modification in technique for growing single crystals of $ZnF_2$:Mn—2063(L)
**Matisoo, J.** (see Pugh, E. W.)—293S
**Matthias, Bernd.** Relations between superconductors and ferromagnets—23S
**Maurer, William C. and John S. Rinehart.** Impact crater formation in rock—1247
**Mayer, Ludwig.** Nucleation experiments in thin magnetic MnBi films—384S
—— Observations on MnBi films during heat treatment—346
**Mayfield, Earle B. and James W. Rogers.** Cratering and shock wave phenomena in steel plates at high impact speeds—472
**Mayfield, J. R.** Microcalorimetric technique for the study of damping and hysteresis in ferromagnetic films—298S
**McCaldin, J. O.** Interaction between arsenic and aluminum in germanium—89
—— **and Roy Harada.** Influence of arsenic pressure on the doping of gallium arsenide with germanium—2065(L)
**McCarthy, Kathryn A. and Stanley S. Ballard.** Thermal conductivity of eight halide crystals in the temperature range 220°K to 390°K—1410
—— (see Little, Warren)—1298(L)
**McClain, William C.** (see Rinehart, John S.)—1809
**McClure, F. T., R. W. Hart, and J. F. Bird.** Acoustic resonance in solid propellant rockets—884
**McClure, J. W.** (see Broudy, R. M.)—1511
**McDuffie, G. E., Jr., J. Richard Cunningham, Jr., and Elmer E. Anderson.** Initial permeability characteristics of mixed yttrium-gadolinium iron garnets—47S
**McGuire, Thomas R. and Robert R. Heikes.** Magnetic properties of the $Li_xMn_{1-x}Se$ system—276S
**McKay, R. W. and K. C. Smith.** Effect of previous history on switching rate in ferrites—133S
**McMahon, Robert E.** (see Tancrell, Roger H.)—762
**McQueen, R. G. and S. P. Marsh.** Equation of state for nineteen metallic elements from shock-wave measurements to two megabars—1253
**McSkimin, H. J. and E. S. Fisher.** Temperature dependence of the adiabatic elastic moduli of single-crystal alpha uranium—1627
**Mead, Warren** (see Sparks, Joseph T.)—356S
**Meckel, B. B., E. G. K. Schwarz, and R. A. Swalin.** Microscopic study of neutron-irradiated germanium—1299(L)
**Meiklejohn, W. H. and R. E. Carter.** Exchange anisotropy in rock magnetism—164S
**Meister, R., C. J. Marhoeffer, R. Sciamanda, L. Cotter, and T. Litovitz.** Ultrasonic viscoelastic properties of associated liquids—854
**Melehan, J. B.** (see Holden, F. C.)—670
**Mendel, E. and S. Weinig.** Generation of dislocations by an electric field in MgO—738(L)
**Mendelsohn, L. I.** Rictometer system for calibrating transmitters of remote indicating compasses—183S
**Menes, M.** (see Bolef, D. I.)—1010, 1426
**Meredith, Robert E. and Charles W. Tobias.** Resistance to potential flow through a cubical array of spheres—1270
**Merz, Kenneth M.** X-ray study of ferromagnetic domains in cobalt zinc ferrite—147

**Methfessel, S., S. Middelhoek, and H. Thomas.** Domain walls in thin magnetic Ni-Fe films—302S
**Meyer, Horst and A. B. Harris.** Specific heat of some rare earth iron garnets and YIG at low temperatures—49S
—— (see Rodrigue, G. P.)—376S
**Meyerhofer, D.** (see Rosi, F. D.)—1105
**Middelhoek, S.** (see Methfessel, S.)—302S
**Miksch, E. S.** (see Pry, R. H.)—162S
**Milano, U.** (see Schlömann, E.)—385S
**Miller, Arthur.** Valence and distribution of manganese ions in ferrospinels—261S
**Miller, D. S.** (see Arajs, Sigurds)—213(L), 325S, 986
**Miller, K. Dexter, Jr.** Distribution of spray from impinging liquid jets—1132(L)
**Miller, M. H.** Comments on article by Cook—607
**Miller, Robert C. and Albert Savage.** Motion of 180° domain walls in metal electroded barium titanate crystals as a function of electric field and sample thickness—662
—— (see Savage, A.)—1546
**Mills, D.** (see Bratina, W. J.)—241S
**Minturn, Robert E., Sheldon Datz, and Ellison H. Taylor.** Thermal emission of alkali ion pulses from clean and oxygenated tungsten—871
—— (see Datz, Sheldon)—880
**Mittlestadt, Verlyn R.** (see Oskam, Hendrik J.)—940(L)
**Miyake, Kiyoshi.** Formation of cesium antimonide. I. Electrical resistivity of the film of cesium-antimony system—76
**Mojoni, A.** (see Bonfiglioli, G.)—684
**Momo, L. R., R. A. Myers, and S. Foner.** Pulsed field millimeter wave maser—443(L)
—— (see Foner, S.)—742(L)
**Montalenti, G.** (see Biorci, G.)—2046, 2121
**Moody, P. L., H. C. Gatos, and M. C. Lavine.** Growth of GaAs crystals in the ⟨111⟩ polar direction—1696(L)
—— (see Gatos, Harry C.)—212(L)
**Moore, A. C. and A. S. Young.** Some physical properties of thin magnetic films—279S
**Moore, W. J.** (see Cunningham, R. L.)—839
**Morgan, J. V.** (see Spencer, H. E.)—2024
**Morgenthaler, Frederic R.** Survey of ferromagnetic resonance in small ferrimagnetic ellipsoids—95S
—— (see Stiglitz, Martin P.)—37S
**Morrish, A. H.** (see Brown, W. F.)—214S
—— (see Watt, L. A. K.)—71S
**Morrison, J. A.** Noise propagation in drifting multivelocity electron beams—2066(L)
—— **and H. L. Frisch.** Bounds on the nonlinear diffusion controlled growth rate of spherical precipitates—1621
—— (see Barr, L. W.)—617(L)
**Mortenson, K. E.** Comments on "Diode capacitors for parametric amplification" by R. C. Knechtli and R. D. Weglein—1135(L)
—— Parametric diode figure of merit and optimization—1207
**Moser, J. B. and D. H. Whitmore.** Kinetics of sintering of sodium chloride in the presence of an inert gas—488
**Muckenhirn, O. William, A. E. LaBonte, and P. J. Besser.** Annular uniaxially magnetized domains in thin Ni-Fe films—304S
**Mueller, D. K.** (see Lindemann, W. W.)—1746
**Musha, T.** (see Itoh, T.)—744(L)
**Myers, R. A.** (see Momo, L. R.)—443(L)

**Nanni, L. F.** (see Slade, J. J., Jr.)—699
**Nassau, K. and L. G. Van Uitert.** Preparation of large calcium-tungstate crystals containing paramagnetic ions for maser applications—1508(L)
**Nathans, Robert.** Precise measurement of magnetic form factors—350S
—— (see Pickart, S. J.)—372S
**Needham, Charles D.** (see Li, James C. M.)—1318
**Néel, L., R. Pauthenet, G. Rimet, and V. S. Giron.** On the laws of magnetization of ferromagnetic single crystals and polycrystals. Application to uniaxial compounds—27S
**Nelson, C. M.** (see Weeks, R. A.)—1555
**Nesbitt, E. A., R. D. Heidenreich, and A. J. Williams.** Necessary factor for heat treatment of the permalloys in a magnetic field—228S
**Neugebauer, C. A.** Temperature dependence of the saturation magnetization of nickel films of thickness less than 100 A—152S
—— Tensile properties of thin, evaporated gold films—1096
**Neurath, P. W.** Simple recording torque magnetometer—184S
**Nevitt, M. V.** Magnetization of the compound TiFe—155
—— Magnetization of the compound TiFe—942(E)
**Newkirk, H. W.** (see Brenden, B. B.)—737(L)
**Newman, R. C.** (see Bullough, R.)—707
**Niegisch, Walter D. and Paul R. Swan.** Hollow pyramidal crystals of polyethylene and a mechanism of growth—1906
**Nielsen, J. W.** Improved method for the growth of yttrium-iron and yttrium-gallium garnets—51S
—— (see Dillon, J. F.)—43S
**Nine, Harmon D. and Norman W. Schubring.** Photographic verification of ultrasonic plane wave scattering by cylinders—1274
**Noggle, T. S. and J. O. Stiegler.** Electron microscope observations of fission fragment tracks in thin films of $UO_2$—2199
—— (see Stiegler, J. O.)—1827(L)
—— (see Young, F. W., Jr.)—604
**Nolle, A. W.** Effect of pressure on the dynamic shear behavior of polyisobutylene—1694(L)
**Nomura, K. C.** (see Blakemore, J. S.)—753, 2226
**Normand, C. E.** (see Yonts, O. C.)—447
**Norr, Marriner K.** (see Houston, B. B.)—615(L)
**Northover, William R.** (see Flaschen, S. S.)—219(L)
**Northrip, John W.** High temperature discharges in ferroelectric ceramics—2293
**Novy, V. F.** (see Vickery, R. C.)—366S

**O'Connor, J. R.** Peltier coefficient at a solid-liquid interface—1690(L)
**Ogden, H. R.** (see Holden, F. C.)—670
**Oi, I.** (see Kostyshyn, B.)—772
**Okuda, Takayoshi and Kenzo Yamamoto.** Asymmetrical triple probe method for determining energy distribution of electron in plasma—158
**Olsen, Clayton E.** Magnetic properties of uranium digermanide—340S
**Olshaker, A. E.** Experimental investigation in lead of the Whipple "meteor bumper"—2118
**Oman, R. M.** (see Dillon, I. A.)—26
**Origlio, G. F.** (see Hyndman, D.)—1849
**Orr, W. H.** (see Bachmann, L.)—1458
**Osborn, John A.** Preface—1S
**Osborn, J. E.** (see Robinson, A.)—1602
**Oskam, Hendrik J. and Verlyn R. Mittlestadt.** Influence of negative ions on ambipolar diffusion of electrons—940(L)
**Overhauser, A. W.** Mechanism of antiferromagnetism in dilute alloys—317S
**Ozaki, H. T.** (see Platzman, P. M.)—1597

**Pack, A. E.** (see Stearns, C. A.)—231
**Paine, T. O. and F. E. Luborsky.** "Interaction anisotropy" model of the structure of Alnico magnet alloys—78S
—— (see Luborsky, F. E.)—66S, 68S
**Pankey, Titus, Jr.** Anisotropy of the magnetic susceptibility of gallium—1802

**Pao, Yoh-Han and R. F. Bjorklund.** Wave functions and energy eigenvalues for the polytetrafluoroethylene chain—1925
**Paré, V. K.** (see Thompson, D. O.)—528
**Parker, R. J.** (see Foy, J. E.)—188S
**Parratt, L. G.** (see Wainfan, N.)—1331
**Paskin, Arthur.** Long-range magnetic interactions via conduction electrons—318S
—— (see Chipman, D. R.)—1130(L)
**Pastor, R. C.** (see Hoskins, R. H.)—1506(L)
**Pauthenet, R.** (see Néel, L.)—27S
**Pavlovic, D. and K. Foster.** Study of heat treatments for low coercive force 14 to 17% aluminum iron alloys—231S
**Pease, M. C.** Conservation laws of uniform linear homogeneous systems—1988
—— Time-dependent electron flow—70
**Pearson, A. David** (see Flaschen, S. S.)—219(L), 431(L)
**Pearson, R. F.** Magnetic anisotropy in ferrimagnetic crystals—160S
**Pedko, A. V.** (see Belov, K. P.)—55S
**Peet, C. S.** (see Wieber, R. H.)—608(L)
**Pell, E. M.** Effect of Li-B ion pairing on $Li^+$ ion drift in Si—1675
—— Ion drift in an $n$-$p$ junction—291
**Perlman, M. M.** Decay of wax electrets—356
**Peter, M., H. G. R. Venkates, and M. W. P. Strandberg.** Molecular trajectories in electric fields and state selection in a beam of sodium chloride—693
**Peterlin, Anton.** Chain folding and free energy density in polymer crystals—1934
**Peters, A. J.** (see Logan, R. A.)—122
**Petersen, E. E.** (see Acrivos, A.)—963
**Phelps, A. V.** Propagation constants for electromagnetic waves in weakly ionized, dry air—1723
**Philip, A. G. Davis.** Effect of viscosity on the splash caused by a drop of water falling into a mixture of glycerol and water—727
**Philippoff, W.** Determination of the anisotropy of bond-polarizability of liquids using flow-birefringence measurements—1899
**Phillips, Victor A.** Polyhedral holes in evaporated AuCu films—697
**Philp, Sanborn F.** Negative hydrogen and deuterium ion beams—1592
**Pickart, S. J. and R. Nathans.** Magnetic-form factor of $Fe_3Al$—372S
**Pidd, R. W.** (see Garvin, H. L.)—1508(L)
**Pietrokowsky, Paul and Frank G. Youngkin.** Ordering in the intermediate phases TiFe, TiCo, and TiNi—1763
**Pinkerton, Arthur P.** (see Gross, B.)—1035
**Platzman, P. M. and H. T. Ozaki.** Scattering of electromagnetic waves from an infinitely long magnetized cylindrical plasma—1597
**Plonsey, Robert and Hwei-Piao Hsu.** Diffraction by a slit—445(E)
**Pohm, A. V., A. A. Read, R. M. Stewart, Jr., and R. F. Schauer.** Operation of magnetic film parametrons in the 100- to 500-Mc region—119S
**Pomerantz, Martin A., Romas A. Shatas, and William C. Schieve.** Secondary electron emission of MgO crystals bombarded by relativistic electrons—2036
**Porbansky, E. M.** (see Trumbore, F. A.)—2068(L)
**Portis, A. M. and A. C. Gossard.** Nuclear resonance in ferromagnetic cobalt—205S
**Posner, A. S., L. Mandelkern, C. R. Worthington, and A. F. Diorio.** Low angle x-ray diffraction of fibrous polyethylene—536
**Powell, Robert L., M. D. Bunch, and Edward F. Gibson.** Low-temperature transport properties of commercial metals and alloys. III. Gold-cobalt—504
——, **William J. Hall, and Hans M. Roder.** Low-temperature transport properties of commercial metals and alloys. II. Aluminums—496
——, **James L. Harden, and Edward F. Gibson.** Low-temperature transport properties of commercial metals and alloys. IV. Reactor grade Be, Mo, and W—1221
**Powers, J.** (see Keedy, D. A.)—1911
**Price, P. J.** Intervalley noise—949
**Primak, William.** Large temperature range annealing—1524
**Proebster, W. E.** (see Dietrich, W.)—281S
**Proud, J. M., Jr., R. T. Beyer, and Paul Tamarkin.** Reflection of sound from randomly rough surfaces—543
**Prutton, M.** (see Bradley, E. M.)—285S
**Pry, R. H., J. S. Kouvel, and E. S. Miksch.** Exchange anisotropy in the system $Mn_{(1-\delta)}Cr_\delta Sb$—162S
**Pugh, E. W., J. Matisoo, D. E. Speliotis, and E. L. Boyd.** Magnetic anisotropy in evaporated iron films—293S

**Rabins, L.** (see Agarwal, Paul D.)—246S
**Rado, G. T. and V. J. Folen.** Determination of molecular field coefficients in ferrimagnets—62
**Rado, G. T.** (see Schnitzler, A. D.)—348S
**Radus, R. J.** Magnetic field measurement using ultrasonics—186S
**Rajan, N. S., R. M. Waterstrat, and Paul A. Beck.** Temperature-dependence of the electrical resistivity of bcc Cr-Fe alloys—731
**Ranken, W. A., G. M. Grover, and E. W. Salmi.** Experimental investigations of the cesium plasma cell—2140
**Rappaport, Paul** (see Wysocki, Joseph J.)—571
**Rasor, N. S.** Figure of merit for thermionic energy conversion—163
**Read, A. A.** (see Pohm, A. V.)—119S
**Reade, Richard F. and Don S. Martin, Jr.** Diffusion of $Ag^+$, $Cl^-$, and $Cd^{++}$ in silver chloride single crystals—1965
**Ree, Taikyue** (see Gabrysh, A. F.)—1785
—— (see Kim, Wan Kyue)—358
**Reed, T. B.** Determination of streaming velocity and the flow of heat and mass in high-current arcs—2047
**Reggia, F.** (see Tompkins, J. E.)—176S
**Reinberg, A. R.** (see Marshall, S. A.)—336S
**Reitz, J. R.** (see Lewis, H. W.)—723
**Remeika, J. P.** $GaFeO_3$: A ferromagnetic-piezoelectric compound—263S
**Reneker, D. H. and P. H. Geil.** Morphology of polymer single crystals—1916
—— (see Eckstein, Y.)—1534
**Reynolds, D. C. and S. J. Czyzak.** Dislocations in two types of CdS crystals—94
**Rhodes, Marion B.** (see Stein, Richard S.)—1873
**Rhodin, T. N.** (see Bachmann, L.)—1458
**Richards, J. L.** Growth of gallium arsenide by horizontal zone melting—600
—— **and A. J. Crocker.** Etch pits in gallium arsenide—611(L)
**Rigert, J. A.** (see Bedo, D. E.)—2289
**Rigrod, W. W.** Power flow and stored energy in thin electron beams—1147
**Rimet, G.** (see Néel, L.)—27S
**Rimmer, M. P. and D. L. Dexter.** Optical constants of germanium in the region 0-10 ev—775
**Rinehart, John S. and William C. McClain.** Experimental determination of stresses generated by an electric detonator—1809
—— (see Maurer, William C.)—1247
**Rittner, E. S.** On the theory of the close-spaced impregnated cathode thermionic converter—1065
**Roberts, J. P.** (see Thompson, D. S.)—433(L)
**Robertson, Harry S.** (see Hakeem, M. A.)—2063(L)

**Robinson, A., J. E. Osborn, and C. C. Hsiao.** Effect of orientation on strength of a model solid—1602
**Robinson, Mark T., A. L. Southern, and William R. Willis.** Diffusion of deuterium in deuteron-irradiated copper—1474
**Robinson, Robert J.** (see Brophy, James J.)—1343
**Rodbell, D. S. and P. E. Lawrence.** Metamagnetic behavior of manganese arsenide—275S
**Roder, Hans M.** (see Powell, Robert L.)—496
**Rodrigue, G. P., H. Meyer, and R. V. Jones.** Resonance measurements in magnetic garnets—376S
**Rogers, James W.** (see Mayfield, Earle B.)—472
**Roof, R. B., Jr.** Reply to comments on "Determination of atomic scattering factors"—1131(L)
**Rosa, Richard J.** Experimental magnetohydrodynamic power generator—735(L)
**Rose, A.** Photovoltaic effect derived from the Carnot cycle —1640
**Rose, D. J.** Mobility of hydrogen and deuterium positive ions in their parent gases—632
**Rosenberg, D.** (see Wehner, G. K.)—177
**Rosenburg, Leonard** (see Spruch, Larry)—2104
**Rosenblatt, Jorge.** Three-dimensional space charge flow—1371
**Roshon, D. D., Jr.** (see Kostyshyn, B.)—772
**Rosi, F. D., D. Meyerhofer, and R. V. Jensen.** Properties of *p*-type GaAs prepared by copper diffusion—1105
**Rossol, F. C.** Subsidiary resonance in the coincidence region in yttrium iron garnet—2273
**Roth, R. S.** (see Fang, P. H.)—278S
**Roth, Walter L.** Neutron and optical studies of domains in NiO—2000
—— **and Glen A. Slack.** Antiferromagnetic structure and domains in single crystal NiO—352S
**Rothwell, William S.** (see Greenler, Robert G.)—616(L)
**Rubinstein, Harvey, Harrison W. Fuller, and Murray E. Hale.** Observation of Néel walls in thin films—437(L)
—— **and Robert J. Spain.** Cross-tie walls in thin films—306S
**Rudd, J. F. and R. D. Andrews.** Photoelastic properties of polystyrene in the glassy state. III. Styrene derivatives and copolymers—818
**Ruppel, W.** (see Cardona, M.)—1826(L)
**Ruth, Ralph P., John C. Marinace, and W. C. Dunlap, Jr.** Vapor-deposited single-crystal germanium—995

**Sáenz, A. W.** Spin waves in complex exchange-coupled lattices and neutron scattering—108S
**Sagar, A.** (see Faust, J. W., Jr.)—331
**Sagnis, James C., Jr., Michael Teig, and Robert L. Ward.** Effect of geometry on thick film toroids—190S
**Saimoto, S., V. Griffiths, and E. Teghtsoonian.** Growth kinks in copper whiskers—1693(L)
**Salkovitz, E. I.** (see Schindler, A. I.)—245S
**Salmi, E. W.** (see Ranken, W. A.)—2140
**Sargeant, W. E.** (see Bockemuehl, R. R.)—180S
**Sato, Hiroshi.** Analysis of magnetic interactions in alloys of platinum with iron group transition elements—326S
**Savage, Albert and R. C. Miller.** Temperature dependence of the velocity of sidewise 180° domain-wall motion in $BaTiO_3$—1546
—— (see Miller, Robert C.)—662
**Savage, Howard.** Effect of Cu precipitation on dislocation etch pits in Ge—1472
**Schauer, R. F.** (see Pohm, A. V.)—119S
**Schaug-Petterson, Tor.** Growing spin waves in ferrites in unstable equilibrium—382S
—— (see Elliott, B. J.)—400S
**Schawlow, A. L.** (see Kleinman, D. A.)—2176
**Schenk, H. L.** (see Young, F. J.)—194S
**Schieber, M.** (see Goldring, G.)—2057
**Schieve, William C.** (see Pomerantz, Martin A.)—2036
**Schindler, A. I. and E. I. Salkovitz.** Effect of applying a magnetic field during neutron irradiation on the magnetic properties of Fe-Ni alloys—245S
**Schlömann, Ernst.** Generation of phonons in high-power ferromagnetic resonance experiments—1647
——, **J. J. Green, and U. Milano.** Recent developments in ferromagnetic resonance at high power levels—385S
—— (see Zeender, R. J.)—1112
**Schmitt, Hans J. and Dipak L. Sengupta.** On the reflection of electromagnetic waves from a medium excited by acoustic waves—439(L)
**Schneidmesser, B.** (see Berman, R.)—2156
**Schnitzler, A. D., V. J. Folen, and G. T. Rado.** Ionic ordering effects in the ferromagnetic resonance of lithium ferrite monocrystals—348S
**Schock, Alfred.** Effect of magnetic fields on thermionic power generators—1978
**Schoening, F. R. L.** On the strength of glass in water vapor —1779
**Schriempf, J. Thomas** (see Allison, F. E.)—846
**Schroder, K. and C. H. Cheng.** Correlation of low temperature caloric and magnetic effects in TiFe—2154
**Schubring, Norman W.** (see Nine, Harmon D.)—1274
**Schultz, J. M. and J. Washburn.** Effect of thermal history on the dislocation substructure near the surfaces of a lithium fluoride crystal—1800
**Schultz, J. W.** (see Blakemore, J. S.)—2226
**Schulz, G. J.** Use of $SF_6^-$ for calibration of the electron energy scale—1134(L)
**Schüppel, W.** (see Andrä, W.)—442(L)
**Schwarz, E. G. K.** (see Meckel, B. B.)—1299(L)
**Sciamanda, R.** (see Meister, R.)—854
**Scott, R. E.** New complex phase in the copper-gold system —2112
**Scovil, H. E. D.** (see DeGrasse, R. W.)—443(L)
**Seavey, M. H., Jr.** Galvanomagnetic effects in ferromagnetic resonance—216S
**Sedov, V. L.** (see Kondorsky, E. I.)—331S
**Seebold, R. E.** (see Sweeney, W. E.)—1061
**Seed, T. J.** Electron damage in mica—1300(L)
**Seelbach, W. C. and J. R. Kiseda.** Elastic switching properties of some square loop materials in toroidal structures —135S
**Seiden, P. E., C. F. Kooi, and J. M. Katz.** Microwave properties of nonstoichiometric polycrystalline yttrium iron garnet—1291
—— **and H. J. Shaw.** High-power effects in ferrimagnetic resonance—432(L)
—— **and H. J. Shaw.** Saturation effects in ferrimagnetic resonance—224S
**Seidensticker, R. G.** (see Hamilton, D. R.)—1165
**Sengupta, Dipak L.** (see Schmitt, Hans J.)—439(L)
**Sexton, W. C.** (see Vickery, R. C.)—366S
**Shah, M. J.** (see Acrivos, A.)—963
**Shatas, Romas A.** (see Pomerantz, Martin A.)—2036
**Shaw, H. J.** (see Elliott, B. J.)—400S
—— (see Seiden, P. E.)—224S, 432(L)
**Shelton, H., C. D. Hendricks, and R. F. Wuerker.** Electrostatic acceleration of microparticles to hypervelocities —1243
**Sherman, B., R. R. Heikes, and R. W. Ure, Jr.** Calculation of efficiency of thermoelectric devices—1
**Shevel, W. L., Jr., and H. Chang.** New approach to high-speed storage—low flux density materials—125S
—— (see Brownlow, J. M.)—121S
**Shockley, W.** (see Goetzberger, A.)—1821
**Shtrikman, S. and D. Treves.** Fine structure of Bloch walls —1304(L)

—— **and D. Treves.** Internal structure of Bloch walls—147S
—— **and D. Treves.** On the remanence of ferromagnetic powders—58S
—— **and D. Treves.** On the resolution of Brown's paradox—72S
**Sidles, P. H.** (see Wallace, D. C.)—168
**Siegel, B. M.** (see Bachmann, L.)—1458
**Siegman, A. E.** Waves on a filamentary electron beam in a transverse-field slow-wave circuit—17
**Simmons, R. O.** (see Balluffi, R. W.)—2284
**Simon, R., R. T. Bate, and E. H. Lougher.** Measurement of thermal conductivity by utilization of the Peltier effect. III. Correction for wire radiation emissivity—2160
**Simon, R. E. and W. E. Spicer.** Field induced photoemission and hot-electron emission from germanium—1505(L)
—— **and R. L. Sproull.** Electron microscope studies of colloids in KCl—2224
**Singer, J. R.** Blood flow measurements using dynamical paramagnetic relaxation times, and paramagnetic tracer techniques—406S
—— Flow rates using nuclear or electron paramagnetic resonance techniques with applications to biological and chemical processes—125
**Singh, Sampooran.** Penetration of rotating shaped charges—578
**Slack, Glen A.** Crystallography and domain walls in antiferromagnetic NiO crystals—1571
—— (see Roth, Walter L.)—352S
**Slade, J. J., Jr., and L. F. Nanni.** Analysis of composite x-ray diffraction profiles—699
**Slager, Donald M.** (see Wharton, Charles B.)—428
**Slaten, Lynore E.** Precipitation of dispersed fine-particle magnetite—74S
**Slichter, W. P.** Defects in polyethylene crystals—1865
**Smakula, A.** (see Avakian, P.)—1720
**Smit, J., F. K. Lotgering, and U. Enz.** Anisotropy properties of hexagonal ferrimagnetic oxides—137S
**Smith, D. O., M. S. Cohen, and G. P. Weiss.** Oblique-incidence anisotropy in evaporated permalloy films—1735
——, **E. E. Huber, Jr., M. S. Cohen, and G. P. Weiss.** Anisotropy and inversion in permalloy films—295S
—— (see Cohen, M. S.)—291S
**Smith, J. F. and C. L. Arbogast.** Elastic constants of single crystal beryllium—99
—— **and J. A. Gjevre.** Elastic constants of yttrium single crystals in the temperature range 4.2–400°K—645
**Smith, K. C.** (see McKay, R. W.)—133S
**Smith, Mac J., E. S. Kirk, and C. W. Spencer.** Device for measurement of the electrical properties of $Bi_2Se_3$ at elevated temperatures—1504(L)
**Smith, Thor L. and Paul J. Stedry.** Time and temperature dependence of the ultimate properties of an SBR rubber at constant elongations—1892
**Smith, W. J.** (see Longini, R. L.)—1204
**Smythe, W. R.** Charged sphere in cylinder—553
**Snyder, D. D.** Bulk densities of separated copper isotopes—440(L)
**Soden, R. R.** (see Van Uitert, L. G.)—226S, 328
**Solomon, Raymond.** Anomalous surface channels on silicon $p$-$n$ junctions—1791
**Solt, I. H. and P. C. Fletcher.** Magnetic anisotropy from the magnetostatic modes—100S
**Sonder, E. and L. C. Templeton.** Gamma irradiation of silicon. I. Levels in $n$-type material containing oxygen—1279
**Soohoo, R. F.** Initial susceptibility spectra of permalloy films—218S
**Sosin, A. and L. L. Bienvenue.** Effect of electron irradiation and subsequent thermal treatment on Young's modulus of copper—249
**Southern, A. L.** (see Robinson, Mark T.)—1474
**Spain, Robert J.** (see Rubinstein, H.)—306S
**Sparks, Joseph T., Warren Mead, Albert J. Kirschbaum, and Walter Marshall.** Neutron diffraction investigation of the $Fe_{1-x}S$ system—356S
**Speliotis, D. E.** (see Pugh, E. W.)—293S
**Spencer, C. W.** (see Smith, Mac J.)—1504(L)
**Spencer, E. G.** (see LeCraw, R. C.)—95S
**Spencer, H. E.** Noise and signal response in lead sulfide photoconductive films—504
—— **and J. V. Morgan.** Hole mobility and crystal size in lead sulfide photoconductive films—2024
**Spicer, W. E.** Photoemission and related properties of the alkali antimonides—2077
—— (see Simon, R. E.)—1505(L)
**Spielberg, N. and J. Ladell.** Crystallographic aspects of extra reflections in x-ray spectrochemical analysis—1659
**Spinner, S. and G. W. Cleek.** Temperature dependence of Young's modulus of vitreous germania and silica—1407
**Sproull, R. L.** (see Simon, R.)—2224
**Spruch, Larry and Ralph Bartram.** Bounds on the elements of the equivalent network for scattering in waveguides. I. Theory—905
—— **and Leonard Rosenberg.** Bounds on low energy scattering parameters—2104
—— (see Bartram, Ralph)—913
**Stadler, H. L.** Localized field permanent magnet arrays—196S
**Stanton, Henry E.** On the yield and energy distribution of secondary positive ions from metal surfaces—678
**Statton, W. O. and L. C. Hoffman.** Structure in vitreous silicate fibers as shown by small-angle scattering of x-rays—404
**Stearns, Carl A.** Effect of aging time after cleavage on the plasticity of MgO single crystals—2317(L)
——, **A. E. Pack, and R. A. Lad.** Factors affecting the ductility and strength of NaCl single crystals tested in flexure—231
**Stedry, Paul J.** (see Landel, Robert F.)—1885
—— (see Smith, Thor L.)—1892
**v.d. Steeg, M. G.** (see Koch, A. J. J.)—75S
**Steele, M. C.** (see Larrabee, R. D.)—1519
**Steier, William H. and Paul D. Coleman.** Theory and application of dipolar ferrite modes—99S
**Stein, Dale F. and J. R. Low, Jr.** Mobility of edge dislocations in silicon-iron crystals—362
**Stein, H. J.** Transitory electrical properties of $n$-type germanium after a neutron pulse—1309
**Stein, Richard S. and Marion B. Rhodes.** Photographic light scattering by polyethylene films—1873
—— (see Keedy, D. A.)—1911
**Stemme, O.** (see Andrä, W.)—442(L)
**Stern, E.** (see Lurio, A.)—1125(L), 1805
**Stewart, R. M., Jr.** (see Pohm, A. V.)—119S
**Stewart, T. W. W.** (see Brannen, E.)—1829(L)
**Stiegler, J. O. and T. S. Noggle.** Direct replica technique for copper—1827(L)
—— (see Noggle, T. S.)—2199
**Stiglitz, Martin P. and Frederic R. Morgenthaler.** Resonance experiments with single crystal yttrium iron garnets in pulsed magnetic fields—37S
**Strandberg, M. W. P.** (see Peter, M.)—693
—— (see Venkates, H. G. R.)—396
**Straley, R., A. Heuer, B. Kane, and G. Tkach.** Miniature memory planes for extreme environmental conditions—126S
**Strayer, R. W.** (see Dyke, W. P.)—790

**Street, R.** Magnetic properties of manganese copper alloys—310S
**Strong, H. M., F. P. Bundy, and H. P. Bovenkerk.** Flat panel vacuum thermal insulation—39
**Strumane, G.** (see Amelinckx, S.)—1359
**Stuetzer, Otmar M.** Ion drag pumps—136
**Sturrock, P. A.** In what sense do slow waves carry negative energy?—2052
—— (see Helmer, J. C.)—458
**Suddeth, J. A.** (see Leder, Lewis B.)—1422
**Suhl, H.** "Foldover" effects caused by spin wave interactions in ferromagnetic resonance—935(L)
**Sulich, M.** (see Greiner, J. H.)—2316(L)
**Swanekamp, F. W.** (see Van Uitert, L. G.)—226S
**Swalin, R. A.** (see Carter, J. R.)—1191
—— (see Meckel, B. B.)—1299(L)
**Sweeney, W. E., Jr., R. E. Seebold, and L. S. Birks.** Electron probe measurements of evaporated metal films—1061
**Szasz, S. E.** Discussion of criteria for the *in situ* combustion of crude oil—1122(L)
**Szaynok, Anna.** Influence of irradiation with rays on the electrification of KCl crystals—451
—— Influence of x-rays on the electrification of NaCl crystals—211(L)

**Tai, Chen To.** Evanescent modes in a partially filled gyromagnetic rectangular wave guide—220(L)
**Takahashi, Noboru.** Electron microscopic study of thin films of the aluminum-copper eutectic prepared by a melting method—1287
**Takeda, Susumu and Arwin A. Dougal.** Microwave study of afterglow discharge in water vapor—412
**Tamarkin, Paul** (see Proud, J. M.)—543
**Tancrell, Roger H. and Robert E. McMahon.** Studies in partial switching of ferrite cores—762
**Tanenbaum, M.** (see Buehler, E.)—388
**Tannenbaum, E.** Film stripping technique for making thin silica windows—940(L)
**Tarpinian, Aram and George E. Gazza.** Etch pits in pyrolytic graphite—1657
**Taylor, Ellison H.** (see Datz, S.)—880
—— (see Minturn, Robert E.)—876
**Taylor, K. N. R.** (see Bate, G.)—991
**Teghtsoonian, E.** (see Saimoto, S.)—1693(L)
**Teig, Michael** (see Sagnis, James C.)—190S
**Templeton, L. C.** (see Sonder, E.)—1279
**Terhune, R. W.** (see Makhov, G.)—936(L)
**Testardi, L. R.** (see Donahoe, F. J.)—1304(L)
**Teutsch, W. B.** (see Garvin, H. L.)—1508(L)
**Thomas, H.** (see Baer, G.)—235S
—— (see Methfessel, S.)—302S
**Thomas, J. E., Jr.** (see Frank, R. C.)—1689(L)
**Thompson, D. O. and V. K. Paré.** Effect of fast neutron bombardment at various temperatures upon the Young's modulus and internal friction of copper—528
**Thompson, D. S. and J. P. Roberts.** Flow of magnesium oxide single crystals—433(L)
**Thomson, Robb.** Radiation limited dislocation motion in crystals—617(L)
**Tiller, W. A.** (see Armstrong, R. W.)—1954
—— (see Bolling, G. F.)—1345, 2040
**Tirmizi, S. M. A.** (see Berman, R.)—2156
**Tkach, G.** (see Straley, R.)—126S
**Tobias, Charles W.** (see Meredith, R. E.)—1270
**Todd, B. Johnson, Jack L. Lineweaver, and John T. Kerr.** Outgassing caused by electron bombardment of glass—51
**Tomboulian, D. H.** (see Bedo, D. E.)—2289
**Tompkins, J. E., F. Reggia, and L. Joseph.** Multimode propagation in gyromagnetic rods and its application to traveling-wave devices—176S
**Toth, Robert S., Rein Kilkson, and Dan Trivich.** Preparation of large area single-crystal cuprous oxide—1117
**Trammell, G. T.** Theory of the low-lying states of some rare earth compounds—362S
**Treitel, Sven.** Thermal attenuation of nonlinear stress waves—391
**Treves, David** (see Fowler, C. A., Jr.)—2267
—— (see Shtrikman, S.)—58S, 72S, 147S, 1304(L)
**Trillat, J. J.** (see Cunningham, R. L.)—839
**Trivich, Dan** (see Toth, R. S.)—1117
**Trolan, J. K.** (see Dyke, W. P.)—790
—— (see Martin, E. E.)—782
**Truell, Rohn** (see Einspruch, Norman G.)—806
**Trumbore, F. A. and W. M. Porbansky.** Solvent evaporation technique for the growth of arsenic-doped germanium single crystals for Esaki diodes—2068(L)
**Turnbull, D. and R. L. Cormia.** A dynamic hard sphere model—674

**Ure, R. W., Jr.** (see Sherman, B.)—1

**Vager, Z.** (see Goldring, G.)—2057
**Vanderslice, T. A.** (see Blodgett, K. B.)—1017
**Van Uitert, L. G. and R. R. Soden.** Single crystal tungstates for resonance and emission studies—328
——, **R. R. Soden, and F. W. Swanekamp.** Resonance line widths of sintered nickel ferrites having low porosities—226S
—— (see Nassau, K.)—1508(L)
**Venables, John D.** Cleavage whiskers—1503(L)
**Venkates, H. G. R. and M. W. P. Strandberg.** Operating characteristics of a molecular-beam maser—396
—— (see Peter, M.)—693
**Vickery, R. C., W. C. Sexton, V. F. Novy, and E. V. Kleber.** Magneto structural studies on gadolinium-iron alloys—366S
**Vivian, W. E.** Transport of noise at microwave frequencies through a space-charge-limited diode—957
**Vong, T. S.** (see Levengood, W. C.)—1416
**Vuylsteke, A. A.** (see Donovan, R. E.)—614(L)

**Wade, Glen** (see Adler, Robert)—1201
—— (see Heffner, H.)—2316(L)
**Wadsworth, M. E.** (see Gabrysh, A. F.)—1785
**Wagner, P. E., J. G. Castle, Jr., and P. F. Chester.** Inversions by fast passage in a multilevel spin system—1498(L)
**Wagner, Richard S. and Bruce Chalmers.** Grain boundaries in germanium—578
**Wainfan, N. and L. G. Parratt.** X-ray reflection studies of the anneal and oxidation of some thin solid films—1331
**Wakefield, J.** (see Bullough, R.)—707
**Walker, Walter P.** (see Catlin, Avery)—2135
**Wallace, D. C., P. H. Sidles, and G. C. Danielson.** Specific heat of high purity iron by a pulse heating method—168
**Wallace, R. L.** (see Batdorf, R. L.)—613(L)
**Walsh, D. J.** (see Batdorf, R. L.)—613(L)
**Walter, J. L.** (see Dunn, C. G.)—827
**Wang, T. C.** (see Giordmaine, J. A.)—463
**Ward, Robert L.** Experimental flux pattern determination in magnetic cores—192S
—— (see Sagnis, James C.)—190S
**Warekois, E. P.** Low-temperature x-ray diffraction studies on vanadium sesquioxide—346S

——, **M. C. Lavine, and H. C. Gatos.** Damaged layers and crystalline perfection in the {111} surfaces of *III–IV* intermetallic compounds—1302(L)
**Warren, B. E.** X-ray measurement of grain size—2237
**Washburn, J.** (see Schultz, J. M.)—1800
**Waters, William E.** Electron sheet beam focusing with tape ladder lines—1814
**Waterstrat, R. M.** (see Rajan, N. S.)—731
**Watson, John H. L.** (see Freeman, Michael W.)—404S
**Watson, R. E.** (see Freeman, A. J.)—374S
**Watson, R. W.** (see Allison, F. E.)—842
**Watt, L. A. K. and A. H. Morrish.** Comparison of the critical single-domain size for $Fe_3O_4$ and $\gamma$-$Fe_2O_3$—71S
**Weaver, C. W. and K. A. Gross.** X-ray examination of brittle fractures in extruded chromium—626
**Webb, W. W.** Dislocation structure and the formation and strength of sodium chloride whiskers—194
—— **and N. P. Bertolone.** Novel mechanism for mass transport during whisker growth—cesium chloride from aqueous films—207
—— (see Amelinckx, S.)—1359
—— (see Fourdeux, A.)—918
**Weeks, R. A. and C. M. Nelson.** Irradiation effects and short-range order in fused silica and quartz—1555
**Weglein, R. D.** (see Knechtli, R. C.)—1134(L)
**Wehner, G. K.** Forces on ion-bombarded electrodes in a low-pressure plasma—1392
—— **and D. Rosenberg.** Angular distribution of sputtered material—177
—— (see Anderson, G. S.)—2365
**Weinberg, F.** (see Fourie, J. T.)—1136(L)
**Weinig, S.** (see Mendel, E.)—738(L)
**Weiss, G. P.** (see Cohen, M. S.)—291S
—— (see Smith, D. O.)—295S, 1746
**Weiss, Jerald A.** Tetrahedral junction—168S
**Weiss, M. T.** Ferrimagnetic resonance at high power—103S
—— High power effects on ferrimagnetic resonance—778
**Weisz, R. S. and D. L. Brown.** Square loop properties of copper-manganese ferrites—269S
**Wernick, J. H.** (see Wolfe, R.)—1959
**Wharton, Charles B. and Donald M. Slager.** Microwave determination of plasma density profiles—428
**Whelan, J. M. and C. S. Fuller.** Precipitation of copper in gallium arsenide—1507(L)
**White, John E.** Cathode of an arc in xenon—1709
—— Probes at high pressure—1502(L)
**White, L. D.** (see Ashkin, A.)—1351
**White, Robert L.** Use of magnetostatic modes as a research tool—86S
—— (see Carson, John W.)—53S
**Whitmore, D. H.** Excitation processes in ceramics and anomalous increase in thermal conductivity at elevated temperatures—1109
—— (see Moser, J. B.)—488
**Whitmore, Frank C.** Experimental study of thermal diffusion in dilute solutions of high polymers—1858
**Wieber, R. H., H. C. Gorton, and C. S. Peet.** Diffusion of copper into AlSb—608(L)
**Wiechec, Walter and Clinton M. Kelley.** Fast switching by domain walls in ferrites—131S
**Wieder, H. H.** Model for switching and polarization reversal in colemanite—180
**Wiederhorn, S. and Drickamer, H. G.** Optical observations concerning the polymorphic transition in the potassium halides—1666
**Wilchinsky, Zigmond W.** Measurement of orientation in polypropylene film—1969
**Wilk, M. B.** (see Lundberg, J. L.)—1131(L)
**Wilkinson, M. K., H. R. Child, J. W. Cable, E. O. Wollan, and W. C. Koehler.** Neutron diffraction investigations of the magnetic ordering in rare earth nitrides—358S
**Willardson, R. K.** (see Aukerman, L. W.)—939(L)
**Willens, R. H.** (see Duwez, Pol)—1136(L), 1137(L), 1500(L)
**Williams, A. J.** (see Nesbitt, E. A.)—228S
**Williams, Richard and Richard H. Bube.** Photoemission in the photovoltaic effect in cadmium sulfide crystals—968
**Willis, J. B.** (see Bullough, R.)—707
**Willis, William R.** (see Robinson, Mark T.)—1474
**Wilsdorf, H. G. F.** (see Fourie, J. T.)—2219
—— (see Kuhlmann-Wildsdorf, Doris)—516
**Winans, G.** (see Zei, D.)—1137(E)
**Witterholt, E. J.** (see Einspruch, Norman G.)—806
**Wojtowicz, Peter J.** High-temperature susceptibility of ferrimagnetic spinels—265S
**Wold, A.** (see Goodenough, J. B.)—342S
**Wolfe, R., J. H. Wernick, and S. E. Haszko.** Anomalous Hall effect in $AgSbTe_2$—1959
**Wolfson, R. G., M. E. Fine, and A. W. Ewald.** Transformation studies of gray tin single crystals—1973
**Wollan, E. O.** (see Wilkinson, M. K.)—358S
**Woodward, J. G. and E. Della Torre.** Particle interaction in magnetic recording tapes—56
—— **and E. Della Torre.** Particle interaction in magnetic recording tapes—398S
**Worthington, C. R.** (see Posner, A. S.)—536
**Wuerker, R. F.** (see Shelton, H.)—1243
**Wysocki, Joseph J.** Thermal conversion in *n*-type GaAs—1686(L)
—— **and Paul Rappaport.** Effect of temperature on photovoltaic solar energy conversion—571

**Yahagi, Kichinosuke and Akibumi Danno.** Gamma-ray induced conductivity in polyethylene coaxial cable—734(L)
**Yamaguchi, S.** On the temperature of an object irradiated with electrons—1825(L)
**Yamamoto, Kenzo** (see Okuda, Takayoshi)—158
**Yariv, Amnon.** Spontaneous emission from an inverted spin system—740(L)
**Yee, R.** (see Kurtz, A. D.)—303
**Yelon, Arthur and R. W. Hoffman.** Production of single-crystal copper films at low temperatures—1672
**Yonts, O. C. and Don E. Harrison, Jr.** Surface cleaning by cathode sputtering—1583
——, **C. E. Normand, and Don E. Harrison, Jr.** High-energy sputtering—447
**Young, A. S.** (see Moore, A. C.)—279S
**Young, F. J. and H. L. Schenk.** Method for measuring iron losses in elliptically polarized magnetic fields—194S
**Young, F. W., Jr., and A. T. Gwathmey.** Development of facets, spirals, and etch pits on copper crystals by heating to high temperatures in high vacua—225
—— **and T. S. Noggle.** Evidence for dislocation reactions in copper—604
—— (see Crawford, J. H.)—1688(L)
**Young, J. R.** Evolution of gases and ions from different anodes under electron bombardment—921
**Youngkin, Frank G.** (see Pietrokowsky, Paul)—1763

**Zeender, R. J. and E. Schlomann.** Ferromagnetic resonance in polycrystalline ferrites using circularly polarized radiation—1112
**Zei, D. and J. G. Winans.** Motion of high-speed arc spots in magnetic fields—1137(E)
**Zinn, John and Charles L. Mader.** Thermal initiation of explosives—323
**Zwick, S. A.** Note on evaporation—1735

# Subject Index to Volume 31

References with (L) are to Letters to the Editor; (E) to Errata


**Acoustics**

Acoustic resonance in solid propellant rockets. F. T. McClure, R. W. Hart, and J. F. Bird—884

Measurement of elastic constants of RbBr, RbI, CsBr, and CsI by an ultrasonic cw resonance technique. D. I. Bolef and M. Menes—1010

On the reflection of electromagnetic waves from a medium excited by acoustic waves. Hans J. Schmitt and Dipak L. Sengupta—439(L)

Photographic verification of ultrasonic plane wave scattering by cylinders. Harmon D. Nine and Norman W. Schubring—1274

Reflection of sound from randomly rough surfaces. J. M. Proud, Jr., R. T. Beyer, and Paul Tamarkin—543

Stress waves in solids. C. R. Cassity—1377

Ultrasonic viscoelastic properties of associated liquids. R. Meister, C. J. Marhoeffer, R. Sciamanda, L. Cotter, and T. Litovitz—854

**Ballistics**

Acoustic resonance in solid propellant rockets. F. T. McClure, R. W. Hart, and J. F. Bird—884

Attenuation of the shock wave produced in a solid by a flying plate. G. R. Fowles—655

Comments on article by Cook. M. H. Miller—607(L)

Cratering and shock wave phenomena in steel plates at high impact speeds. Earle B. Mayfield and James W. Rogers—472

Depth of indentation on an impacting projectile. R. A. Graham—619(L)

Equation of state for nineteen metallic elements from shock-wave measurements to two megabars. R. G. McQueen and S. P. Marsh—1253

Explosively loaded metallic cylinders. I. F. E. Allison and R. W. Watson—842

Explosively loaded metallic cylinders. II. F. E. Allison and J. Thomas Schriempf—846

Impact crater formation in rock. William C. Maurer and John S. Rinehart—1247

Penetration of rotating shaped charges. Sampooran Singh—578

Stress waves in solids. C. R. Cassity—1377

Study of initial conditions in constant velocity impact. James F. Bell—2188

Ultra-high-speed photographs refuting "cohesion in plasma." W. C. Davis and A. W. Campbell—1225

**Combustion**

Discussion of criteria for the *in situ* combustion of crude oil. S. E. Szasz—1122(L)

Experimental determination of stresses generated by an electric detonator. John S. Rinehart and William C. McClain—1809

Remarks on "Some criteria for the *in situ* combustion of crude oil." H. R. Bailey and B. K. Larkin—1123(L)

Reply to the letters of Szasz, and Bailey and Larkin. Philip Cooperman—1124(L)

**Crystals and Crystal Growth**

Antiferromagnetic structure and domains in single crystal NiO. Walter L. Roth and Glen A. Slack—352S

Cleavage whiskers. John D. Venables—1503(L)

Crystallography and domain walls in antiferromagnetic NiO crystals. Glen A. Slack—1571

Damaged layers and crystalline perfection in the {111} surfaces of *III–V* intermetallic compounds. E. P. Warekois, M. C. Lavine, and H. C. Gatos—1302(L)

Detection of growth striations in germanium crystals. Albert C. English—1498(L)

Dielectric behavior of single crystals of tri-glycine sulfate (TGS) from 1 kc to 2500 Mc. A. Lurio and E. Stern—1125(L)

Direct measurements of the surface energies of crystals. J. J. Gilman—2208

Dislocation arrays in depth and recrystallization produced by surface deformation of single crystals of copper at high temperature. John M. Bailey and Allan T. Gwathmey—215(L)

Dislocation structure and the formation and strength of sodium chloride whiskers. W. W. Webb—194

Dislocations in indented magnesium oxide crystals. A. S. Keh—1538

Dislocations in metal crystals grown from the melt. C. Elbaum—1413

Effect of orientation on strength of a model solid. A. Robinson, J. E. Osborn, and C. C. Hsiao—1602

Effects of surface irregularities on single crystal resonance parameters. C. R. Buffler—222S

Elastic constants of single-crystal aluminum antimonide. D. I. Bolef and M. Menes—1426

Factors affecting the ductility and strength of NaCl single crystals tested in flexure. C. A. Stearns, A. E. Pack, and R. A. Lad—231

Flow of magnesium oxide single crystals. D. S. Thompson and J. P. Roberts—433(L)

Formation of cavities on dislocations in crystals of NaCl and KCl. L. W. Barr and J. A. Morrison—617(L)

Growth from the melt. I. Influence of surface intersections in pure metals. G. F. Bolling and W. A. Tiller—1345

Growth from the melt. II. Cellular interface morphology. G. F. Bolling and W. A. Tiller—2040

Growth kinks in copper whiskers. S. Saimoto, V. Griffiths, and E. Teghtsoonian—1693(L)

Growth of cesium chloride crystals from solution and melt. P. Avakian and A. Smakula—1720

Growth of GaAs crystals in the ⟨111⟩ polar direction. P. L. Moody, H. C. Gatos, and M. C. Lavine—1696(L)

Growth of gallium arsenide by horizontal zone melting. J. L. Richards—600

Growth of InSb crystals in the ⟨111⟩ polar direction. H. C. Gatos, P. L. Moody, and M. C. Lavine—212(L)

Growth, structure, and properties of graphite whiskers. Roger Bacon—283

Improved method of growing CdS crystals from the vapor phase. P. D. Fochs—1733

Improvements on the pedestal method of growing silicon and germanium crystals. W. C. Dash—736(L)

Influence of crystallographic orientation on the charge formation during phase changes in solids. S. Mascarenhas and L. G. Freitas—1684

Instability of magnetic resonance in single-crystal spheres of yttrium iron garnet. Joseph I. Masters—41S

Interferometric determination of twist and polytype in silicon-carbide whiskers. D. R. Hamilton—112

Mobility of edge dislocations in silicon-iron crystals. Dale F. Stein and J. R. Low, Jr.—362

Modification in technique for growing single crystals of $ZnF_2$:Mn. L. M. Matarrese and F. L. Hughes—2063(L)

Novel mechanism for mass transport during whisker growth—cesium chloride from aqueous films. W. W. Webb and N. P. Bertolone—207

**Crystals and Crystal Growth** *(continued)*
On the laws of magnetization of ferromagnetic single crystals and polycrystals. Application to uniaxial compounds. L. Néel, R. Pauthenet, G. Rimet, and V. S. Giron—27S
Photoemission in the photovoltaic effect in cadmium sulfide crystals. Richard Williams and Richard H. Bube—968
Precipitation in silicon crystals containing aluminum. R. Bullough, R. C. Newman, J. Wakefield, and J. B. Willis—707
Preparation of large calcium-tungstate crystals containing paramagnetic ions for maser applications. K. Nassau and L. G. Van Uitert—1508(L)
Preparation of large area single-crystal cuprous oxide. Robert S. Toth, Rein Kilkson, and Dan Trivich—1117
Preparation of tin single crystals for transmission electron microscopy. J. T. Fourie, F. Weinberg, and F. W. C. Boswell—1136(L)
Production of single-crystal copper films at low temperatures. Arthur Yelon and R. W. Hoffman—1672
Resonance experiments with single crystal yttrium iron garnets in pulsed magnetic fields. Martin P. Stiglitz and Frederic R. Morgenthaler—37S
Single-crystal magnetic anisotropy and magnetostriction studies in iron-base alloys. R. C. Hall—1037
Single crystal tungstates for resonance and emission studies. L. G. Van Uitert and R. R. Soden—328
Solvent evaporation technique for the growth of arsenic-doped germanium single crystals for Esaki diodes. F. A. Trumbore and E. M. Porbansky—2068(L)
Some properties of zinc sulfide crystals grown from the melt. Arrigo Addamiano and Manuel Aven—36
Structure in vitreous silicate fibers as shown by small-angle scattering of x-rays. W. O. Statton and L. C. Hoffman—404
Temperature dependence of the adiabatic elastic moduli of single-crystal alpha uranium. H. J. McSkimin and E. S. Fisher—1627
Transformation studies of gray tin single crystals. R. G. Wolfson, M. E. Fine, and A. W. Ewald—1973
Vapor-deposited single-crystal germanium. Ralph P. Ruth, John C. Marinace and W. C. Dunlap, Jr.—995

**Cryogenic Devices and Applications**
Criteria for the choice of a superconducting bolometer. Bogoljub Lalevic—1234
Heating in liquid helium resulting from neutron and gamma bombardment by a fission source. M. G. Chasanov—733(L)
Low-temperature transport properties of commercial metals and alloys. II. Aluminums. Robert L. Powell, William J. Hall, and Hans M. Roder—496
Low-temperature transport properties of commercial metals and alloys. III. Gold-cobalt. Robert L. Powell, M. D. Bunch, and Edward F. Gibson—504
Low-temperature transport properties of commercial metals and alloys. IV. Reactor grade Be, Mo, and W. Robert L. Powell, James L. Harden, and Edward F. Gibson—1221
Monte Carlo calculations of the motions of electrons in helium. T. Itoh and T. Musha—744(L)
Production of single-crystal copper films at low temperatures. Arthur Yelon and R. W. Hoffman—1672
Strong field magnetization at low temperatures and approach to absolute saturation of thulium metal. Warren E. Henry—323S

**Defects in Solids, Dislocations**
Behavior of individual dislocations in strain-hardened LiF crystals. J. J. Gilman and W. G. Johnston—687
Changes in macroscopic shape, lattice parameter, and density in crystals due to point defects. R. W. Balluffi and R. O. Simmons—2284
Cleavage whiskers. John D. Venables—1503(L)
Crystal distortion in magnetic compounds. Junjiro Kanamori—14S
Damaged layers and crystalline perfection in the {111} surfaces of *III–V* intermetallic compounds. E. P. Warekois, M. C. Lavine, and H. C. Gatos—1302(L)
Defects in dislocations produced by focusing collisions in fcc lattices. G. Leibfried—117
Detection of growth striations in germanium crystals. Albert C. English—1498(L)
Development of facets, spirals, and etch pits on copper crystals by heating to high temperatures in high vacua. F. W. Young, Jr., and A. T. Gwathmey—225
Direct observation of superdislocations in a superlattice. M. J. Marcinkowski, R. M. Fisher, and N. Brown—1303(L)
Dislocation arrays in depth and recrystallization produced by surface deformation of single crystals of copper at high temperature. John M. Bailey and Allan T. Gwathmey—215(L)
Dislocation damping effects in rock salt. Charles L. Bauer and Robert B. Gordon—945
Dislocation etch pits on $p$-type lead telluride. B. B. Houston and Marriner K. Norr—615(L)
Dislocation etch pits on the {111} and {$\bar{1}\bar{1}\bar{1}$} surfaces of InSb. Harry C. Gatos and Mary C. Lavine—743(L)
Dislocation multiplication in lithium fluoride crystals. W. G. Johnston and J. J. Gilman—632
Dislocation networks in a low-alloy steel. A. S. Keh—1501(L)
Dislocation ribbons and stacking faults in graphite. P. Delavignette and S. Amelinckx—1691(L)
Dislocation structure and the formation and strength of sodium chloride whiskers. W. W. Webb—194
Dislocations in two types of CdS crystals. D. C. Reynolds and S. J. Czyzak—94
Dislocations in indented magnesium oxide crystals. A. S. Keh—1538
Dislocations in metal crystals grown from the melt. C. Elbaum—1413
Dislocations in silicon carbide. S. Amelinckx, G. Strumane, and W. W. Webb—1359
Dynamic hard sphere model. D. Turnbull and R. L. Cormia—674
Effect of atomic interaction potential on defect production in metals. E. Brown and G. H. Goedecke—932
Effect of Cu precipitation on dislocation etch pits in Ge. Howard Savage—1472
Effect of thermal history on the dislocation substructure near the surfaces of a lithium fluoride crystal. J. M. Schultz and J. Washburn—1800
Electron optical study of basal dislocations in graphite. S. Amelinckx and P. Delavignette—2126
Etch pits at dislocations in copper. J. D. Livingston—1071
Etch pits in gallium arsenide. J. L. Richards and A. J. Crocker—611(L)
Etch pits in pyrolytic graphite. Aram Tarpinian and George E. Gazza—1657
Evidence for dislocation reactions in copper. F. W. Young, Jr., and T. S. Noggle—604
Formation of cavities on dislocations in crystals of NaCl and KCl. L. W. Barr and J. A. Morrison—617(L)
Generation of dislocations by an electric field in MgO. E. Mendel and S. Weinig—738(L)
Gold induced climb of dislocations in silicon. W. C. Dash—2275

Grain boundaries in germanium. Richard S. Wagner and Bruce Chalmers—581
Grain boundary and lattice diffusion in polycrystalline bodies. H. S. Levine and C. J. MacCallum—595
Growth kinks in copper whiskers. S. Saimoto, V. Griffiths, and E. Teghtsoonian—1693(L)
Irradiation effects and short-range order in fused silica and quartz. R. A. Weeks and C. M. Nelson—1555
Mechanism for the production of $F$ centers in NaCl by irradiation with gamma rays. J. H. Crawford, Jr., and F. W. Young, Jr.—1688(L)
Method for the detection of flaws in yttrium iron garnet crystals. E. Buehler and M. Tanenbaum—388
Mobility of edge dislocations in silicon-iron crystals. Dale F. Stein and J. R. Low, Jr.—362
On the behavior of thermal vacancies in pure aluminum. Doris Kuhlmann-Wilsdorf and H. G. F. Wilsdorf—516
On the observation of macroscopic spirals on gallium arsenide surfaces. Warren J. Little and Kathryn A. McCarthy—1298(L)
Origin of the "first-order structure" of CP4-etched Ge surfaces. G. Bonfiglioli, A. Ferro, and A. Mojoni—684
Oxygen in nickel. L. H. Germer and C. D. Hartman—2085
Polyhedral holes in evaporated AuCu films. Victor A. Phillips—697
Precipitation in silicon crystals containing aluminum. R. Bullough, R. C. Newman, J. Wakefield, and J. B. Willis—707
Radiation limited dislocation motion in crystals. Robb Thomson—617(L)
Production of dislocation loops by a combined climb and glide mechanism. J. T. Fourie and H. G. F. Wilsdorf—2219
Reviving the classical theory of friction by a modern dislocation theory of deformation revision. John H. Dismant—221(L)
Shapes of etch hillocks and pits and their correlation with measured etch rates. B. A. Irving—109
Some effects occurring in dislocated tellurium. J. S. Blakemore, J. W. Schultz, and K. C. Nomura—2226
Some elastic properties of a screw dislocation wall. James C. M. Li and Charles D. Needham—1318
Specific ionization measurements and energy requirements for $F$-center formation. R. D. Jordan and R. S. Alger—747
Spiral dislocations on glass fracture surfaces. W. C. Levengood and T. S. Vong—1416
Stacking faults in zinc. A. Fourdeux, A. Berghezan, and W. W. Webb—918
Statistics of the occupation of dislocation acceptors (one-dimensional interaction statistics). R. M. Broudy and J. W. McClure—1511
Terraces on etchpits. J. J. Gilman—936(L)
Theory of dislocation climb in metals. Jens Lothe—1077

**Dielectrics**

Beta particle transmission currents in solid dielectrics. Bernhard Gross, Arthur Bradley, and Arthur P. Pinkerton—1035
Bounds on the elements of the equivalent network for scattering in waveguides. II. Application to dielectric obstacles. Ralph Bartram and Larry Spruch—913
Decay of wax electrets. M. M. Perlman—356
Detailed study of switching current in barium titanate. M. E. Drougard—352
Dielectric behavior of single crystals of tri-glycine sulfate (TGS) from 1 kc to 2500 Mc. A. Lurio and E. Stern—1125(L)
Dielectric properties of lead titanate zirconate ceramics at very low frequencies. Robert Gerson—1615
Generation of dislocations by an electric field in MgO. E. Mendel and S. Weinig—738(L)
Influence of irradiation with $\beta$ rays on the electrification of KCl crystals. Anna Szaynok—451
Influence of x-rays on the electrification of NaCl crystals. Anna Szaynok—211(L)
Measurements of the dielectric constant of $BaTiO_3$ single crystals in the paraelectric region at X band. A. Lurio and E. Stern—1805
Motion of 180° domain walls in metal electroded barium titanate crystals as a function of electric field and sample thickness. Robert C. Miller and Albert Savage—662
Response of a loaded idealized piezoelectric plate to an electric signal. Leo Levi—1237
Temperature dependence of the velocity of sidewise 180° domain-wall motion in $BaTiO_3$. A. Savage and R. C. Miller—1546

**Diffusion**

Bounds on the nonlinear diffusion controlled growth rate of spherical precipitates. J. A. Morrison and H. L. Frisch—1621
Diffusion coefficients, solubilities, and permeabilities for He, Ne, $H_2$, and $N_2$ in Vycor glass. C. C. Leiby, Jr., and C. L. Chen—268
Diffusion of $Ag^+$, $Cl^-$, and $Cd^{++}$ in silver chloride single crystals. Richard F. Reade and Don S. Martin, Jr.—1965
Diffusion of boron into silicon. A. D. Kurtz and R. Yee—303
Diffusion of copper into AlSb. R. H. Wieber, H. C. Gorton, and C. S. Peet—608(L)
Diffusion of deuterium in deuteron-irradiated copper. Mark T. Robinson, A. L. Southern, and William R. Willis—1474
Effect of oxide layers on the diffusion of phosphorus into silicon. R. B. Allen, H. Bernstein, and A. D. Kurtz—334
Kinetics of sintering of sodium chloride in the presence of an inert gas. J. B. Moser and D. H. Whitmore—488
Regelation, surface diffusion, and ice sintering. W. D. Kingery—833
Solubilities and diffusivities of nitrogen in polyethylene. J. L. Lundberg, M. B. Wilk, and M. J. Huyett—1131(L)

**Elasticity and Anelasticity**

Effect of orientation on strength of a model solid. A. Robinson, J. E. Osborn, and C. C. Hsiao—1602
Elastic constants of bismuth. Yakov Eckstein, A. W. Lawson, and Darrell H. Reneker—1534
Elastic constants of single crystal aluminum antimonide. D. I. Bolef and M. Menes—1426
Elastic constants of single crystal beryllium. J. F. Smith and C. L. Arbogast—99
Elastic constants of yttrium single crystals in the temperature range 4.2–400°K. J. F. Smith and J. A. Gjevre—645
Elastic moduli of face-centered cubic cobalt. R. Dean Dragsdorf—434(L)
Measurement of elastic constants of RbBr, RbI, CsBr, and CsI by an ultrasonic cw resonance technique. D. I. Bolef and M. Menes—1010
Propagation of large amplitude waves in annealed aluminum. James F. Bell—277
Recovery of internal friction in aluminum after plastic deformation. Ivar Holwech—928
Scattering of a plane transverse wave by a spherical obstacle in an elastic medium. Norman G. Einspruch, E. J. Witterholt, and Rohn Truell—806
Some elastic properties of a screw dislocation wall. James C. M. Li and Charles D. Needham—1318

**Elasticity and Anelasticity** *(continued)*
Stress waves in solids. C. R. Cassity—1377
Temperature dependence of the adiabatic elastic moduli of single-crystal alpha uranium. H. J. McSkimin and E. S. Fisher—1627
Temperature dependence of Young's modulus of vitreous germania and silica. S. Spinner and G. W. Cleek—1407
Tensile strength of pyrolytic graphite up to 2750°C. H. E. Martens and L. D. Jaffe—1122(L)
Thermal attenuation of nonlinear stress waves. Sven Treitel—391

**Electrical Circuits and Networks**
Bounds on the elements of the equivalent network for scattering in waveguides. I. Theory. Larry Spruch and Ralph Bartram—905
Bounds on the elements of the equivalent network for scattering in waveguides. II. Application to dielectric obstacles. Ralph Bartram and Larry Spruch—913
Circuit dynamics of the pinch. J. Killeen and B. A. Lippmann—1549
Comments on "Diode capacitors for parametric amplification" by R. C. Knechtli and R. D. Weglein. K. E. Mortenson—1135(L)
Diode capacitors for parametric amplification. R. C. Knechtli and R. D. Weglein—1134(L)
Proposed molecular amplifier and coherent generator for millimeter and submillimeter waves. Walter Gordy and Monroe Cowan—941(L)
Response of a loaded idealized piezoelectric plate to an electric signal. Leo Levi—1237
Theory of a negative-resistance transmission line amplifier with distributed noise generators. K. K. N. Chang—871

**Electrical Conductivity**
Charged sphere in cylinder. W. R. Smythe—553
dc measurements on tape-wound cores. R. C. Barker and R. M. Brownell—243S
Detailed study of switching current in barium titanate. M. E. Drougard—352
Effects of internal oxidation and heat treatment on the electrical resistivity of dilute CuMn, CuFe, and CuCo alloys. C. A. Domenicali and E. L. Christenson—1730
Effect of random inhomogeneities on electrical and galvanomagnetic measurements. Conyers Herring—1939
Electromagnetic theory of dc effects in ferromagnetic resonance. H. J. Juretschke—1401
Gamma-ray induced conductivity in polyethylene coaxial cable. Kichinosuke Yahagi and Akibumi Danno—734(L)
Generation of alternating current in the cesium cell. H. L. Garvin, W. B. Teutsch, and R. W. Pidd—1508(L)
Hall mobility of holes in AgBr. Roland C. Hanson and Frederick C. Brown—210(L)
Influence of crystallographic orientation on the charge formation during phase changes in solids. S. Mascarenhas and L. G. Freitas—1684
In what sense do slow waves carry negative energy? P. A. Sturrock—2052
Low-temperature transport properties of commercial metals and alloys. II. Aluminums. Robert L. Powell, William J. Hall, and Hans M. Roder—496
Low-temperature transport properties of commercial metals and alloys. III. Gold-cobalt. Robert L. Powell, M. D. Bunch, and Edward F. Gibson—504
Low-temperature transport properties of commercial metals and alloys. IV. Reactor grade Be, Mo, and W. Robert L. Powell, James L. Harden, and Edward F. Gibson—1221
Monte Carlo calculations of the motions of electrons in helium. T. Itoh and T. Musha—744(L)
Relations between superconductors and ferromagnets. Bernd Matthias—23S
Solutions of the equations of space charge flow for radial flow between concentric spherical electrodes. I. Itzkan—652
Some electrical properties of amorphous selenium films. Richard A. Fotland—1558
Spreading resistance in cylindrical semiconductor devices. David P. Kennedy—1490
Temperature-dependence of the electrical resistivity of bcc Cr-Fe alloys. N. S. Rajan, R. M. Waterstrat, and Paul A. Beck—731
Uniform silicon $p$-$n$ junctions. I. Broad area breakdown. R. L. Batdorf, A. G. Chynoweth, G. C. Dacey, and P. W. Foy—1153

**Electromagnetic Waves and Fields**
Beam refrigeration by means of large magnetic fields. Robert Adler and Glen Wade—1201
Charged-particle orbits in varying magnetic fields. E. I. Gordon—1187
Diffraction by a slit. Robert Plonsey and Hwei-Piao Hsu—445(E)
Electromagnetic theory of dc effects in ferromagnetic resonance. H. J. Juretschke—1401
Electrostatic acceleration of microparticles to hypervelocities. H. Shelton, C. D. Hendricks, and R. F. Wuerker—1243
Evanescent modes in a partially filled gyromagnetic rectangular wave guide. Chen To Tai—220(L)
Finite amplitude electromagnetic waves in gyromagnetic media. B. A. Auld—106S
Megavolt electronics Cerenkov coupler for the production of millimeter and submillimeter waves. Paul D. Coleman and Charles Enderby—1695(L)
Microwave measurement of semiconductor carrier lifetimes. H. A. Atwater—938(L)
Microwave noise from low-pressure arcs. R. M. Hill and S. K. Ichiki—735(L)
Microwave properties of nonstoichiometric polycrystalline yttrium iron garnet. P. E. Seiden, C. F. Kooi, and J. M. Katz—1291
Propagation constants for electromagnetic waves in weakly ionized, dry air. A. V. Phelps—1723

**Electron and Ion Emission**
Anomalous thermionic emssion from UC and $(ZrC)_{0.8}$-$(UC)_{0.2}$. G. C. Kuczynski—1500(L)
Contribution of anode emission to space charge in thermionic power converters. Anthony F. Dugan—1397
Density of a thorium monolayer for maximum thermionic emission. W. E. Danforth and D. L. Goldwater—1715
Detection of metastable atoms and ions. Homer D. Hagstrum—897
Electrical stability and life of the heated field emission cathode. W. P. Dyke, F. M. Charbonnier, R. W. Strayer, R. L. Floyd, J. P. Barbour, and J. K. Trolan—790
Energy distribution and cooling effect of electrons emitted from an arc cathode. T. H. Lee—924
Field dependence of photoelectric emission from tantalum. J. L. Gumnick and D. W. Juenker—102
Field induced photoemission and hot-electron emission from germanium. R. E. Simon and W. E. Spicer—1505(L)
Formation of cesium antimonide. I. Electrical resistivity of the film of cesium-antimony system. Kiyoshi Miyake—76
Influence of negative ions on ambipolar diffusion of electrons. Hendrik J. Oskam and Verlyn R. Mittlestadt—940(L)
Negative hydrogen and deuterium ion beams. Sanborn F. Philp—1592

On the yield and energy distribution of secondary positive ions from metal surfaces. Henry E. Stanton—678
Photoemission and related properties of the alkali antimonides. W. E. Spicer—2077
Positive column formation in ion sources employing surface ionization. P. L. Auer and H. Hurwitz, Jr.—1007
Secondary electron emission of MgO crystals bombarded by relativistic electrons. Martin A. Pomerantz, Romas A. Shatas, and William C. Schieve—2036
Simple theory concerning the reflection of electrons from solids. T. E. Everhart—1483
Single crystal tungstates for resonance and emission studies. L. G. Van Uitert and R. R. Soden—328
Spontaneous emission from an inverted spin system. Amnon Yariv—740(L)
Stable, high density field emission cold cathode. E. E. Martin, J. K. Trolan, and W. P. Dyke—782
Thermal emission of alkali ion pulses from clean and oxygenated tungsten. Robert E. Minturn, Sheldon Datz, and Ellison H. Taylor—876
Thermal positive ion emission and the anomalous flicker effect. S. Datz, R. E. Minturn, and E. H. Taylor—880
Thermionic properties of UC. George A. Haas and John T. Jensen, Jr.—1231
Ultimate and secondary electron energies in the negative glow of a cold-cathode discharge in helium. J. M. Anderson—511

**Electron and Ion Optics**

Molecular trajectories in electric fields and state selection in a beam of sodium chloride. M. Peter, H. G. R. Venkates, and M. W. P. Strandberg—693
On the reflection of electromagnetic waves from a medium excited by acoustic waves. Hans J. Schmitt and Dipak L. Sengupta—439(L)
Proposed molecular amplifier and coherent generator for millimeter and submillimeter waves. Walter Gordy and Monroe Cowan—941(L)
Scattering of electromagnetic waves from the infinitely long magnetized cylindrical plasma. P. M. Platzman and H. T. Ozaki—1597
Strong field magnetization at low temperatures and approach to absolute saturation of thulium metal. Warren E. Henry—323S
Surface wave excitation and propagation. Joseph B. Keller and Frank C. Karal, Jr.—1039
Total electromagnetic cross sections of imperfectly conducting cylinders. E. S. Cassedy and J. Fainberg—739(L)
Transport equation for the spectral density of a multiple-scattered electromagnetic field. Dimitri S. Bugnolo—1176
Transport of noise at microwave frequencies through a space-charge-limited diode. W. E. Vivian—957

**Electron Beams**

Adiabatic collapse of a relativistic electron beam. T. F. Godlove and D. C. dePackh—2016
Angular distribution and polarization of the radiation emitted by electrons accelerated in a synchrotron. D. E. Bedo, D. H. Tomboulian, and J. A. Rigert—2289
Beam refrigeration by means of large magnetic fields. Robert Adler and Glen Wade—1201
Conservation laws of an interacting electron beam. Marshall C. Pease—2028
Determination of electrode shapes for axially symmetric electron guns. K. J. Harker—2165
Electron probe measurements of evaporated metal films. W. E. Sweeney, Jr., R. E. Seebold, and L. S. Birks—1061
Electron sheet beam focusing with tape ladder lines. William E Waters—1814
Evolution of gases and ions from different anodes under electron bombardment. J. R. Young—921
Focusing molecular beams of $NH_3$. J. C. Helmer, F. B. Jacobus, and P. A. Sturrock—458
Generation of millimeter waves by the electron beam of a microtron. E. Brannen, H. Froelich, and T. W. W. Stewart—1829(L)
Molecular beam formation by long parallel tubes. J. A. Giordmaine and T. C. Wang—463
Noise propagation in drifting multivelocity electron beams. J. A. Morrison—2066(L)
Noise temperature measurement on a traveling wave maser preamplifier. R. W. DeGrasse and H. E. D. Scovil—443(L)
On the concept of fictitious surface charges of an electron beam. E. L. Chu—381
On the nonconservation of noise parameters in multivelocity beams. J. Berghammer and S. Bloom—454
Parametric amplifier theory for plasmas and electron beams. G. S. Kino—1449
Partition noise in electron beams at microwave frequencies. A. Ashkin and L. D. White—1351
Power flow and stored energy in thin electron beams. W. W. Rigrod—1147
Simple theory concerning the reflection of electrons from solids. T. E. Everhart—1483
Single-velocity equivalents for multivelocity electron streams. Glenn A. Gray—370
Technique for calculating x-ray intensities in the electron probe microanalyzer. L. S. Birks—1297(L)
Theory of fast-wave parametric amplification. Curtis C. Johnson—338
Time-dependent electron flow. M. C. Pease—70
Waves on a filamentary electron beam in a transverse-field slow-wave circuit. A. E. Siegman—17

**Electron Diffraction**

Effect of specimen delocalization in electron diffraction studies of gas molecules. L. S. Bartell—252

**Electron Microscopy**

Determination of magnetization distribution in thin films using electron microscopy. Harrison W. Fuller and Murray E. Hale—238
Direct replica technique for copper. J. O. Stiegler and T. S. Noggle—1827(L)
Electron microscope observations of fission fragment tracks in thin films of $UO_2$. T. S. Noggle and J. O. Stiegler—2199
Electron microscope studies of colloids in KCl. R. E. Simon and R. L. Sproull—2224
Electron microscopic study of thin films of the aluminum-copper eutectic prepared by a melting method. Noboru Takahashi—1287
Microscopic study of neutron-irradiated germanium. B. B. Meckel, E. G. K. Schwarz, and R. A. Swalin—1299(L)
Preparation of tin single crystals for transmission electron microscopy. J. T. Fourie, F. Weinberg, and F. W. C. Boswell—1136(L)
Proceedings of the Electron Microscope Society of America—1831

**Electron Tubes**

Electrical stability and life of the heated field emission cathode. W. P. Dyke, F. M. Charbonnier, R. W. Strayer, R. L. Floyd, J. P. Barbour, and J. K. Trolan—790
Negative glow plasma as a cathode for electron tubes. J. M. Anderson and L. A. Harris—1463
Transport of noise at microwave frequencies through a space-charge-limited diode. W. E. Vivian—957

**Energy Conversion**

Calculation of efficiency of thermoelectric devices. B. Sherman, R. R. Heikes, and R. W. Ure, Jr.—1

**Energy Conversion** (*continued*)
Contribution of anode emission to space charge in thermionic power converters. Anthony F. Dugan—1397
Diagrams representing states of operation of a general thermocouple. A. H. Boerdijk—1141
Effect of interelectrode spacing on cesium thermionic converter performance. R. L. Hirsch—2064(L)
Effect of magnetic fields on thermionic power generators. Alfred Schock—1978
Effect of temperature on photovoltaic solar energy conversion. Joseph J. Wysocki and Paul Rappaport—571
Efficiency of the plasma thermocouple. H. W. Lewis and J. R. Reitz—723
Experimental magnetohydrodynamic power generator. Richard J. Rosa—735(L)
Figure of merit for thermionic energy conversion. N. S. Rasor—163
Generation of alternating current in the cesium cell. H. L. Garvin, W. B. Teutsch, and R. W. Pidd—1508(L)
On the theory of the close-spaced impregnated cathode thermionic converter. E. S. Rittner—1065
Peltier coefficient at a solid-solid interface. J. R. O'Connor—1690(L)
Performance of a thermoelectric converter under constant heat flux operation. P. S. Castro and W. W. Happ—1314
Potential distributions in a low-pressure thermionic converter. P. L. Auer—2096
Thermionic properties of UC. George A. Haas and John T. Jensen, Jr.—1231

**Explosives and Explosions**
Classification of wire explosions. William G. Chace and Morton A. Levine—1298(L)
Thermal initiation of explosives. John Zinn and Charles L. Mader—323

**Ferroelectricity**
Bias in ferroelectric colemanite. Ennio Fatuzzo—1029
Dielectric properties of lead titanate zirconate ceramics at very low frequencies. Robert Gerson—1615
High-temperature discharges in ferroelectric ceramics John W. Northrip—2293
Model for switching and polarization reversal in colemanite. H. H. Wieder—180
Motion of 180° domain walls in metal electroded barium titanate crystals as a function of electric field and sample thickness. Robert C. Miller and Albert Savage—662
Temperature dependence of the velocity of sidewise 180° domain-wall motion in $BaTiO_3$. A. Savage and R. C. Miller—1546
Variation in ferroelectric characteristics of lead zirconate titanate ceramics due to minor chemical modifications. Robert Gerson—188

**Ferromagnetic Materials and Ferrites**
Absorption, reflectivity, and Faraday rotation measurements on some rare-earth iron garnets and on $\alpha$-$Fe_2O_3$. P. C. Bailey—39S
Analysis of a practical perpendicular head for digital purposes. George J. Y. Fan—402S
Analysis of magnetic interactions in alloys of platinum with iron group transition elements. Hiroshi Sato—326S
Angular variation of the magnetic properties of elongated single domain iron particles. F. E. Luborsky and T. O. Paine—66S
Anisotropy and inversion in permalloy films. D. O. Smith, E. E. Huber, Jr., M. S. Cohen, and G. P. Weiss—295S
Anisotropy properties of hexagonal ferrimagnetic oxides. J. Smit, F. K. Lotgering, and U. Enz—137S
Annular uniaxially magnetized domains in thin Ni-Fe films. O. William Muckenhirn, A. E. LeBonte, and P. J. Besser—304S
Antiferromagnetic $FeVO_3$. Chester R. Berry and Charles M. Combs—1130(L)
Antiferromagnetic structure and domains in single crystal NiO. Walter L. Roth and Glen A. Slack—352S
Antiferromagnetism of iron in face-centered crystalline lattice and the causes of anomalies in Invar physical properties. E. I. Kondorsky and V. L. Sedov—331S
Blood flow measurements using dynamical paramagnetic relaxation times, and paramagnetic tracer techniques. J. R. Singer—406S
Broadband reciprocal ferrite phase shifters. T. D. Geiszler and R. A. Henschke—174S
Characteristics of Supermendur at 500°C. M. Lauriente and G. E. Lynn—237S
Coercive force and remanence of 25 A to 2000 A diameter cobalt, iron, and iron-cobalt alloy. F. E. Luborsky and T. O. Paine—68S
Comparison of the critical single-domain size for $Fe_3O_4$ and $\gamma Fe_2O_3$. L. A. K. Watt and A. H. Morrish—71S
Cross-tie walls in thin films. Harvey Rubinstein and Robert J. Spain—306S
Crystallography and domain walls in antiferromagnetic NiO crystals. Glen A. Slack—1571
Direct-current measurements on tape-wound cores. R. C. Barker and R. M. Brownell—243S
Determination of molecular field coefficients in ferrimagnets. G. T. Rado and V. J. Folen—62
Direct cation-cation interactions in primarily ionic solids. John B. Goodenough—359S
Domain wall velocities in thin iron-nickel films. N. C. Ford, Jr.—300S
Domain walls in thin magnetic Ni-Fe films. S. Methfessel, S. Middlehoek, and H. Thomas—302S
Double pump degenerate ferrite amplifier. Peter Gottlieb—172S
Effect of applying a magnetic field during neutron irradiation on the magnetic properties of Fe-Ni alloys. A. I. Schindler and E. I. Salkovitz—245S
Effects of directional ordering on the damping of zone-melted iron. R. E. Maringer—229S
Effect of directional orientation on the magnetic properties of cube oriented magnetic sheets. K. Foster and J. J. Kramer—233S
Effect of eddy currents on domain wall configurations, wall motion and loss for a domain model of cube-on-edge material. P. D. Agarwal and D. G. Graham—249S
Effect of impurities on the low-temperature spontaneous magnetization of cubic ferromagnetic crystals. A. A. Maradudin and P. A. Dixon—329S
Effect of potassium ions on the reaction and final properties of Mn-Zn ferrite. Stefan Mako'agwa—339S
Effect of previous history on switching rate in ferrites. R. W. McKay and K. C. Smith—133S
Elastic constants of yttrium single crystals in the temperature range 4.2–400°K. J. F. Smith and J. A. Gjevre—645
Electrodeposited memory elements for a nondestructive memory. T. R. Long—123S
Electron spin relaxation in ferromagnetic insulators. R. C. LeCraw, R. C. Fletcher, and E. G. Spencer—95S
Evanescent modes in a partially filled gyromagnetic rectangular wave guide. Chen To Tai—220(L)
Exchange anisotropy in rock magnetism. W. H. Meiklejohn and R. E. Carter—164S
Exchange anisotropy in the system $Mn_{0.5}Cr_2Sb$. R. H. Pry, J. S. Kouvel, and E. S. Miksch—162S
Explanation for the low-temperature behavior of the anisotropy of iron. W. J. Carr, Jr.—69

Fast switching by domain walls in ferrites. Walter Wiechec and Clinton M. Kelley—131S
Ferrimagnetic resonance at high power. M. T. Weiss—103S
Ferrimagnetic resonance in impurity doped yttrium iron garnet (YIG). J. F. Dillon, Jr., and J. W. Nielsen—43S
Ferrite films—new logic and storage devices. J. M. Brownlow, W. L. Shevel, Jr., and O. A. Gutwin—121S
Ferroelectric and ferrimagnetic properties of $(Ba_{6-2x}R_{2x})(Nb_{8-x}Fe_{1+x})O_{30}$. P. H. Fang and R. S. Roth—278S
Ferromagnetic alloy phases near the compositions $Ni_2MnIn$, $Ni_2MnGa$, $Co_2MnGa$, $Pd_2MnSb$, and PdMnSb. F. A. Hames—370S
Ferromagnetic-antiferromagnetic interaction in Fe-FeS. J. H. Greiner, I. M. Croll, and M. Sulich—2316
Ferromagnetic powders in waveguides at elevated temperatures. A. D. Krall and E. T. Hooper, Jr.—178S
Ferromagnetic resonance in polycrystalline ferrites using circularly polarized radiation. R. J. Zeender and F. Schlomann—1112
Flux reversal in soft ferromagnetics. E. M. Gyorgy—110S
"Foldover" effects caused by spin wave interactions in ferromagnetic resonance. H. Suhl—935(L)
$GaFeO_3$: Ferromagnetic-piezoelectric compound. J. P. Remeika—263S
Growing spin waves in ferrites in unstable equilibrium. Tor Schaug-Petersen—382S
Harmonic generation in a ferrimagnetic disk. Glenn E. Bennett—98S
High field magnetization study of ferrimagnetic arrangements in chromite spinels. I. S. Jacobs—263S
High-permeability garnets. Elmer E. Anderson and J. Richard Cunningham, Jr.—1687(L)
High power effects in ferrimagnetic resonance. P. E. Seiden and H. J. Shaw—432(L)
High power effects on ferrimagnetic resonance. M. T. Weiss—778
High-speed ferrite rotating half-wave plate. Franklin S. Coale—170S
High-temperature susceptibility of ferrimagnetic spinels. Peter J. Wojtowicz—265S
Hot working of Alnico V alloys. C. L. Kolbe and D. L. Martin—84S
Hyperfine interactions in magnetic materials by $\gamma$-$\gamma$ angular correlation measurements. M. E. Caspari, S. Frankel, and M. A. Gilleo—320S
Improved method for the growth of yttrium-iron and yttrium-gallium garnets. J. W. Neilsen—51S
Influence of ionic order on the magnetocrystalline anisotropy and crystalline field parameters in lithium ferrite monocrystals. V. J. Folen—166S
Initial permeability characteristics of mixed yttrium-gadolinium iron garnets. G. E. McDuffie, Jr., J. Richard Cunningham, and Elmer E. Anderson—47S
Initial-permeability spectra of microscopic iron-oxide particles. W. F. Brown, Jr., J. F. Hanton, and A. M. Morrish—214S
Instability of magnetic resonance in single crystal spheres of yttrium iron garnet. Joseph I. Masters—41S
"Interaction anisotropy" model of the structure of Alnico magnet alloys. T. O. Paine and F. E. Luborsky—78S
Interaction of magnetic crystals with radiation in the range $10^4$-$10^5$ $cm^{-1}$. A. M. Clogston—198S
Interpretation of the magnetic and crystallographic properties of several iron, nickel, and iron-nickel nitrides. J. B. Goodenough, A. Wold, and R. J. Arnott—342S
Intrinsic and anneal-induced anisotropy in cobalt-substituted *W*-type hexagonal oxides. L. R. Bickford, Jr.—259S
Investigations into the origin of anisotropy in oblique-incidence films. M. S. Cohen, E. E. Huber, Jr., G. P. Weiss, and D. O. Smith—291S
Ionic ordering effects in the ferromagnetic resonance of lithium ferrite monocrystals. A. D. Schnitzler, V. J. Folen, and G. T. Rado—348S
Localized field permanent magnet arrays. H. L. Stadler—196S
Long-range magnetic interactions via conduction electrons. Arthur Paskin—318S
Long-term magnetic stability of Alnico and barium ferrite magnets. K. J. Kronenberg and M. A. Bohlmann—82S
Low-temperature x-ray diffraction studies on vanadium sesquioxide. E. P. Warekois—346S
Magnetic anisotropy and magnetostriction of ordered and disordered cobalt-iron alloys. R. C. Hall—157S
Magnetic anisotropy in evaporated iron films. E. W. Pugh, J. Matisoo, D. E. Speliotis, and E. L. Boyd—293S
Magnetic anisotropy in ferrimagnetic crystals. R. F. Pearson—160S
Magnetic behavior in the transition region of a hematite single crystal. S. T. Lin—273S
Magnetic behavior of polycrystalline neodymium, holmium, and erbium from 300 to 1500°K. Sigurds Arajs and D. S. Miller—325S
Magnetic contribution to the ultrasonic attenuation in annealed and deformed steel (SAE 1020). W. J. Bratina, U. M. Martius and D. Mills—241S
Magnetic field measurement using ultrasonics. R. J. Radus—186S
Magnetic form factor of $Fe_3Al$. S. J. Pickart and R. Nathans—372S
Magnetic interactions and distribution of ions in the garnets. S. Geller—30S
Magnetic moments of alloys of gadolinium with some of the transition elements. William M. Hubbard, Edmond Adams, and John V. Gilfrich—368S
Magnetic properties of ferromagnetic superconductors. R. M. Bozorth and D. D. Davis—321S
Magnetic properties of the $Li_xMn_{1-x}Se$ system. Thomas R. McGuire and Robert R. Heikes—276S
Magnetic properties of uranium digermanide. Clayton E. Olsen—340S
Magnetic transitions in $Ti_2O_3$ and $V_2O_3$. P. H. Carr and S. Foner—344S
Magnetization of a dilute suspension of a multidomain ferromagnetic. C. P. Bean and I. S. Jacobs—1228
Magnetization of the compound TiFe. M. V. Nevitt—155
Magnetostatic modes in disks and rods. J. F. Dillon, Jr.—1605
Magnetostatic modes of a ferromagnetic slab. R. W. Damon and J. R. Eshbach—104S
Magnetostriction of gadolinium iron garnets. K. P. Belov and A. V. Pedko—55S
Magneto structural studies on gadolinium-iron alloys. R. C. Vickery, W. C. Sexton, V. F. Novy, and E. V. Kleber—366S
Mechanism of antiferromagnetism in dilute alloys. A. W. Overhauser—317S
Metamagnetic behavior of manganese arsenide. D. S. Rodbell and P. E. Lawrence—275S
Method for the detection of flaws in yttrium iron garnet crystals. E. Buehler and M. Tanenbaum—388
Microcalorimetric technique for the study of damping and hysteresis in ferromagnetic films. J. R. Mayfield—298S
Microwave properties of nonstoichiometric polycrystalline yttrium iron garnet. P. E. Seiden, C. F. Kooi, and J. M. Katz—1291
Microwave resonance in rare earth iron garnets. C. Kittel—11S

**Ferromagnetic Materials and Ferrites** *(continued)*
Neutron diffraction investigation of the $Fe_{1-x}S$ system. Joseph T. Sparks, Warren Mead, Albert J. Kirschbaum, and Walter Marshall—356S
Neutron diffraction investigation of the magnetic structure of nickel oxide. H. A. Alperin—354S
Neutron diffraction investigations of the magnetic ordering in rare earth nitrides. M. K. Wilkinson, H. R. Child, J. W. Cable, E. O. Wollan, and W. C. Koehler—358S
New material for permanent magnets on a base of Mn and Al. A. J. J. Koch, P. Hokkeling, M. G. v.d. Steeg, and K. J. deVos—75S
Nonlinear effects of crystalline anisotropy on ferromagnetic resonance. Peter Gottlieb—2059
Nuclear resonance in ferromagnetic cobalt. A. M. Portis and A. C. Gossard—205S
On internal friction anomaly in ferromagnetics and antiferromagnetics near the Curie point. K. P. Belov, G. I. Katayev, and R. Z. Levitin—153S
On the incorporation of neodymium in mixed yttrium-neodymium-iron garnets. G. Goldring, M. Schieber, and Z. Vager—2057
On the laws of magnetization of ferrimagnetic single crystals and polycrystals. Application to uniaxial compounds. L. Néel, R. Pauthenet, G. Rimet, and V. S. Giron—27S
On the remanence of ferromagnetic powders. S. Shtrikman and D. Treves—58S
Paramagnetic susceptibilities of Fe and Fe-Si alloys. Sigurds Arajs and D. S. Miller—986
Permanent magnet leadage permeance evaluation based on polar radiation analogy. J. E. Foy and R. J. Parker—188S
Permanent magnets obtained by drawing compacts of parallel iron wires. E. P. Levi—1469
Precipitation of dispersed fine-particle magnetite. Lynore E. Slaten—74S
Precise measurement of magnetic form factors. Robert Nathans—350S
Preferred orientation and ordering in evaporated films of Fe, Ni, and Fe-Ni. R. F. Adamsky—289S
Properties of manganese ferrites prepared at various oxygen pressures. Aleksander Bragiński—339S
Pulsed ferrimagnetic microwave generator. B. Elliot, T. Schaug-Peterson, and H. J. Shaw—400S
Recent developments in ferromagnetic resonance at high power levels. E. Schlömann, J. J. Green, and U. Milano—385S
Rectangular hysteresis loop ferrites with large Barkhausen steps. Aaron P. Greifer and William J. Croft—85
Relations between superconductors and ferromagnets. Bernd Matthias—23S
Resonance experiments with single crystal yttrium iron garnets in pulsed magnetic fields. Martin P. Sziglitz and Frederic R. Morgenthaler—37S
Resonance line widths of sintered nickel ferrites having low porosities. L. G. Van Uitert, R. R. Soden, and F. W. Swanekamp—226S
Resonance measurements in magnetic garnets. G. P. Rodrique, H. Meyer, and R. V. Jones—376S
Rigorous solution of eddy current losses in rectangular bar for single plane domain wall model. Paul D. Agarwal and L. Rabins—246S
Role of cation vacancy in magnetic annealing of iron-cobalt ferrites. Shuichi Iida—251S
Roll magnetic anisotropy of iron-aluminum crystals. Soshin Chikazumi—158S
Samarium substitutions in yttrium iron garnet. J. Richard Cunningham, Jr., and Elmer E. Anderson—45S
Saturation effects in ferrimagnetic resonance. P. E. Seiden and H. J. Shaw—224S
Secondary recrystallization in vacuum annealed silicon iron. G. Baer, D. Ganz, and H. Thomas—235S
Single-crystal magnetic anisotropy and magnetostriction studies in iron-base alloys. R. C. Hall—1037
Some physical properties of thin magnetic films. A. C. Moore and A. S. Young—279S
Specific heat of high purity iron by a pulse heating method. D. C. Wallace, P. H. Sidles, and G. C. Danielson—168
Specific heat of some rare earth iron garnets and YIG at low temperatures. Horst Meyer and A. B. Harris—49S
Spin waves in complex exchange-coupled lattices and neutron scattering. A. W. Saenz—108S
Spontaneous magnetizations of some gadolinium alloys. Sigurds Arajs and D. S. Miller—213(L)
Square loop properties of copper-manganese ferrites. R. S. Weisz and D. L. Brown—269S
State of *d* electrons in transition metals. Conyers Herring—3S
Static and dynamic studies of magnetization distribution in thin films by electron microscopy. Harrison W. Fuller and Murray E. Hale—308S
Studies in partial switching of ferrite cores. Roger H. Tancrell and Robert E. McMahon—762
Study of heat treatments for low coercive force 14–17 percent aluminum iron alloys. D. Pavlovic and K. Foster—231S
Survey of ferromagnetic resonance in small ferrimagnetic ellipsoids. Frederic R. Morgenthaler—95S
Switching behavior of low-remanence ferrite. F. B. Hagedorn and E. M. Gyorgy—398S
Temperature dependence of anisotropy and saturation magnetization in iron and iron-silicon alloys. C. D. Graham, Jr.—150S
Temperature dependence of the electrical resistivity of bcc Cr-Fe alloys. N. S. Rajan, R. M. Waterstrat, and Paul A. Beck—731
Temperature dependence of the saturation magnetization of ferrites with magnetoplumbite structure. G. Heimke—271S
Theory and application of dipolar ferrite modes. William H. Steier and Paul D. Coleman—99S
Time decrease in initial permeability in $Mn_xFe_{3-x}O_{4+y}$. W. A. Crapo—267S
Transmission electron diffraction of Alnico V. K. J. Kronenberg—80S
Valence and distribution of manganese ions in ferrospinels. Arthur Miller—261S
Volume dependence of ferrimagnetic resonance properties in $Ni_{1-x}Co_xFe_2O_4$. I. P. Kaminow—220S
Walker modes in large ferrite samples. B. A. Auld—1642
X-ray study of ferromagnetic domains in cobalt zinc ferrite. Kenneth M. Merz—147

**Fluid Dynamics**
Effect of gas pressure and cone angle on the velocities of electrically excited shock waves. Philip J. Hart—436(L)
Experimental magnetohydrodynamic power generator. Richard J. Rosa—735(L)
Monte Carlo calculation of molecular flow rates through a cylindrical elbow and pipes of other shapes. D. H. Davis—1169
On the flow of a non-Newtonian liquid on a rotating disk. A. Acrivos, M. J. Shah, and E. E. Petersen—963
Resistance to potential flow through a cubical array of spheres. Robert E. Meredith and Charles W. Tobias—1270
Three-dimensional wedge impact on a compressible fluid. S. F. Borg—438(L)

**Fluid Flow, Low Speed**
Effect of viscosity on the splash caused by a drop of water falling into a mixture of glycerol and water. A. G. Davis Philip—727
Flow of polyethylene into a capillary. E. B. Bagley and A. M. Birks—556
On the flow of a non-Newtonian liquid on a rotating disk. A. Acrivos, M. J. Shah, and E. E. Petersen—963
Theory of non-Newtonian flow. III. Method for analyzing non-Newtonian flow curves. Wan Kyue Kim, Nishio Hirai, Taikuye Ree, and Henry Eyring—358

**Fracture**
Effect of orientation on strength of a model solid. A. Robinson, J. E. Osborn, and C. C. Hsiao—1602
Hooke's law in shear and polymer melt fracture. E. B. Bagley—1126(L)
Spiral dislocations on glass fracture surfaces. W. C. Levengood and T. S. Vong—1416
X-ray examination of brittle fractures in extruded chromium. C. W. Weaver and K. A. Gross—626

**Friction and Wear**
Effect of fast neutron bombardment at various temperatures upon the Young's modulus and internal friction of copper. D. O. Thompson and V. K. Paré—528
Recovery of internal friction in aluminum after plastic deformation. Ivar Holwech—928
Reviving the classical theory of friction by a modern dislocation theory of deformation revision. John H. Dismant—221(L)
Reviving the classical theory of friction by a modern dislocation theory of deformation revision. John H. Dismant—942(E)
Rolling friction of polymeric materials. I. Elastomers. Donald G. Flom—306

**Gaseous Electron Physics**
Cathode of an arc in xenon. John E. White—1709
Detection of metastable atoms and ions. Homer D. Hagstrum—897
Energy distribution and cooling effect of electrons emitted from an arc cathode. T. H. Lee—924
Etching of surfaces with 8-kev argon ions. R. L. Cunningham, P. Hayman, C. Lecomte, W. J. Moore, and J. J. Trillat—839
Evolution of gases and ions from different anodes under electron bombardment. J. R. Young—921
Experimental study of arc stability. I. J. D. Cobine and G. A. Farrall—2296
Generation of alternating current in the cesium cell. H. L. Garvin, W. B. Teutsch, and R. W. Pidd—1508(L)
High-frequency breakdown of air. Donald Kelly and Henry Margenau—1617
Influence of negative ions on ambipolar diffusion of electrons. Hendrik J. Oskam and Verlyn R. Mittlestadt—940(L)
Intensities of λ1850 and λ2537 in low-pressure mercury vapor lamps with rare gas present. Bentley T. Barnes—852
Ion energies in a cold cathode discharge in a magnetic field. John Backus and Norman E. Huston—400
Mechanism of inert gas cleanup in a gaseous discharge. K. B. Blodgett and T. A. Vanderslice—1017
Microwave noise from low-pressure arcs. R. M. Hill and S. K. Ichiki—735(L)
Microwave study of afterglow discharge in water vapor. Susumu Takeda and Arwin A. Dougal—412
Mobility of hydrogen and deuterium positive ions in their parent gases. D. J. Rose—643
Motion of high-speed arc spots in magnetic fields. D. Zei and J. G. Winans—1137(E)
Negative hydrogen and deuterium ion beams. Sanborn F. Philp—1592
Numerical calculation of absolute bremsstrahlung intensity for a fully ionized dissociated hydrogenic gas. G. Sargent Janes and H. Koritz—525
Positive column formation in ion sources employing surface ionization. P. L. Auer and H. Hurwitz—1007
Probes at high pressure. John E. White—1502(L)
Surface cleaning by cathode sputtering. O. C. Yonts and Don E. Harrison, Jr.—1583
Three-dimensional space charge flow. Jorge Rosenblatt—1371
Ultimate and secondary electron energies in the negative glow of a cold-cathode discharge in helium. J. M. Anderson—511
Use of $SF_6^-$ for calibration of the electron energy scale. G. J. Schulz—1134(L)

**Liquids**
Comments on a ruptured soap film. F. E. C. Culick—1128(L)
Distribution of spray from impinging liquid jets. K. Dexter Miller, Jr.—1132(L)
Dynamic hard sphere model. D. Turnbull and R. L. Cormia—674
More experiments on liquid films. R. M. Koros, J. Deckers, and M. Boudart—1129(L)
On the flow of a non-Newtonian liquid on a rotating disk. A. Acrivos, M. J. Shah, and E. E. Petersen—963
Ultrasonic viscoelastic properties of associated liquids. R. Meister, C. J. Marhoeffer, R. Sciamanda, L. Cotter, and T. Litovitz—854

**Luminescence and Photoconductivity**
Effect of pressure on phosphor decay. D. W. Gregg and H. G. Drickamer—494
Field induced photoemission and hot-electron emission from germanium. R. E. Simon and W. E. Spicer—1505(L)
Grain-boundary photoresponse. W. W. Lindemann and R. K. Mueller—1746
Hole mobility and crystal size in lead sulfide photoconductive films. H. E. Spencer and J. V. Morgan—2024
Influence of transverse modes on photoconductive decay in filaments. J. S. Blakemore and K. C. Nomura—753
Intensities of λ1850 and λ2537 in low-pressure mercury vapor lamps with rare gas present. Bentley T. Barnes—852
Mechanism of photoconductivity in microcrystalline powders. Richard H. Bube—2239
Noise and signal response in lead sulfide photoconductive films. H. E. Spencer—505
Photoeffects in nonuniformly irradiated *p-n* junctions. Gerald Lucovsky—1088
Photoelectronic analysis of high resistivity crystals: (a) GaAs, (b) $Sb_2S_3$. Richard H. Bube—315
Photoemission in the photovoltaic effect in cadmium sulfide crystals. Richard Williams and Richard H. Bube—968
Print-out process in photographic emulsion grains. J. F. Hamilton and L. E. Brady—609(L)
Saturation of photocurrent with light intensity. Richard H. Bube—1301(L)

**Magnetic Resonance**
Charged-particle orbits in varying magnetic fields. E. I. Gordon—1187
Classical theory of spin configurations in the cubic spinel. T. A. Kaplan—364S
Effects of surface irregularities on single crystal resonance parameters. C. R. Buffler—222S

**Magnetic Resonance** *(continued)*
Electromagnetic theory of dc effects in ferromagnetic resonance. H. J. Juretschke—1401
Electron spin relaxation in ferromagnetic insulators. R. C. LeCraw, R. C. Fletcher, and E. G. Spencer—95S
Ferrimagnetic resonance at high power. M. T. Weiss—103S
Ferrimagnetic resonance in impurity doped yttrium iron garnet (YIG). J. F. Dillon, Jr., and J. W. Nielsen—43S
Ferromagnetic resonance in polycrystalline ferrites using circularly polarized radiation. R. J. Zeender and E. Schlömann—1112
Flow rates using nuclear or electron paramagnetic resonance techniques with applications to biological and chemical processes. J. R. Singer—125
"Foldover" effects caused by spin wave interactions in ferromagnetic resonance. H. Suhl—935(L)
Galvanomagnetic effects in ferromagnetic resonance. M. H. Seavey, Jr.—216S
Generation of phonons in high-power ferromagnetic resonance experiments. Ernst Schlömann—1647
Growing spin waves in ferrites in unstable equilibrium. Tor Schaug-Petersen—382S
High-power effects in ferrimagnetic resonance. P. E. Seiden and H. J. Shaw—432(L)
High-power effects on ferrimagnetic resonance. M. T. Weiss—778
Hyperfine interactions in magnetic materials by $\gamma$-$\gamma$ angular correlation measurements. M. E. Caspari, S. Frankel, and M. A. Gilleo—320S
Instability of magnetic resonance in single crystal spheres of yttrium iron garnet. Joseph I. Masters—41S
Inversions by fast passage in a multilevel spin system. P. E. Wagner, J. G. Castle, Jr., and P. F. Chester—1498(L)
Ionic ordering effects in the ferromagnetic resonance of lithium ferrite monocrystals. A. D. Schnitzler, V. J. Folen, and G. T. Rado—348S
Magnetic anisotropy from the magnetostatic modes. I. H. Solt, Jr., and P. C. Fletcher—100S
Magnetic susceptibilities of single crystal $NiCl_2 \cdot 6H_2O$ and $CoCl_2 \cdot 6H_2O$ at low temperatures. R. B. Flippen and S. A. Friedberg—338S
Magnetostatic modes in disks and rods. J. F. Dillon, Jr.—1605
Magnetostatic modes of a ferromagnetic slab. R. W. Damon and J. R. Eshbach—104S
Mechanism of antiferromagnetism in dilute alloys. A. W. Overhauser—317S
Microwave resonance in rare earth iron garnets. C. Kittel—11S
Paramagnetic resonance absorption of nickel in sapphires. S. A. Marshall and A. R. Reinberg—336S
Paramagnetic resonance of Yb in aluminum and gallium garnets. John W. Carson and Robert L. White—53S
Recent developments in ferromagnetic resonance at high power levels. E. Schlömann, J. J. Green, and U. Milano—385S
Resonance experiments with single crystal yttrium iron garnets in pulsed magnetic fields. Martin P. Stiglitz and Frederic R. Morgenthaler—37S
Resonance linewidths of sintered nickel ferrites having low porosities. L. G. Van Uitert, R. R. Soden, and F. W. Swanekamp—226S
Resonance measurements in magnetic garnets. G. P. Rodrigue, H. Meyer, and R. V. Jones—376S
Saturation effects in ferrimagnetic resonance. P. E. Seiden and H. J. Shaw—224S
Single crystal tungstates for resonance and emission studies. L. G. Van Uitert and R. R. Soden—328
Spin waves in complex exchange-coupled lattices and neutron scattering. A. W. Saenz—108S
Subsidiary resonance in the coincidence region in yttrium iron garnet. F. C. Rossol—2273
Survey of ferromagnetic resonance in small ferrimagnetic ellipsoids. Frederic R. Morgenthaler—95S
Theory of the low-lying states of some rare earth compounds. G. T. Trammell—362S
Use of magnetostatic modes as a research tool. Robert L. White—86S
Volume dependence of ferrimagnetic resonance properties. I. P. Kaminow—220S
Walker modes in large ferrite samples. B. A. Auld—1642

**Magnetism, General**
Analysis of magnetic interactions in alloys of platinum with iron group transition elements. Hiroshi Sato—326S
Angular variation of the magnetic properties of elongated single domain iron particles. F. E. Luborsky and T. O. Paine—66S
Anisotropic magnetization. Earl R. Callen—149S
Anisotropy and inversion in permalloy films. D. O. Smith, E. E. Huber, Jr., M. S. Cohen, and G. P. Weiss—295S
Anisotropy of the magnetic susceptibility of gallium. Titus Pankey, Jr.—1802
Anisotropy properties of hexagonal ferrimagnetic oxides. J. Smit, F. K. Lotgering, and U. Enz—137S
Annular uniaxially magnetized domains in thin Ni-Fe films. O. William Muckenhirn, A. E. LaBonte, and P. J. Besser—304S
Antiferromagnetism of iron in face-centered crystalline lattice and the causes of anomalies in Invar physical properties. E. I. Kondorsky and V. L. Sedov—331S
Beam refrigeration by means of large magnetic fields. Robert Adler and Glen Wade—1201
Charged-particle orbits in varying magnetic fields. E. I. Gordon—1187
Coercive force and remanence of 25 A to 2000 A diameter cobalt, iron, and iron-cobalt alloy. F. E. Luborsky and T. O. Paine—68S
Comparison of the critical single-domain size for $Fe_3O_4$ and $\gamma Fe_2O_3$. L. A. K. Watt and A. H. Morrish—71S
Corbino disk. D. A. Kleinman and A. L. Schawlow—2176
Correlation of low temperature caloric and magnetic effects in TiFe. K. Schroder and C. H. Cheng—2154
Cross-tie walls in thin films. Harvey Rubinstein and Robert J. Spain—306S
Crystal distortion in magnetic compounds. Junjiro Kanamori—14S
Crystallography and domain walls in antiferromagnetic NiO crystals. Glen A. Slack—1571
Determination of magnetization distribution in thin films using electron microscopy. Harrison W. Fuller and Murray E. Hale—238
Development of high-speed coincident current memory cores. Barlane R. Eichbaum—117S
Direct cation-cation interactions in primarily ionic solids. John B. Goodenough—359S
Domains in thin magnetic films observed by electron microscopy. Harrison W. Fuller and Murray E. Hale—1699
Domain wall velocities in thin iron-nickel films. N. C. Ford, Jr.—300S
Domain walls in thin magnetic Ni-Fe films. S. Methfessel, S. Middlehoek, and H. Thomas—302S
Double pump degenerate ferrite amplifier. Peter Gottlieb—172S
Effect of crystalline fields on magnetic form factors. A. J. Freeman and R. E. Watson—374S

Effect of directional orientation on the magnetic properties of cube oriented magnetic sheets. K. Foster and J. J. Kramer—233S
Effect of eddy currents on domain wall configurations, wall motion, and loss for a domain model of cube-on-edge material. P. D. Agarwal and D. G. Graham—249S
Effect of impurities on the low-temperature spontaneous magnetization of cubic ferromagnetic crystals. A. A. Maradudin and P. A. Dixon—329S
Effect of neutron bombardment on the magnetic properties of very high permeability iron. G. Biorci, A. Ferro, and G. Montalenti—2046
Effect of potassium ions on the reaction and final properties of Mn-Zn ferrite. Stefan Makolagwa—339S
Effects of directional ordering on the damping of zone-melted iron. R. E. Maringer—229S
Effects of hydrostatic pressure on the properties of magnetic materials. R. E. Alley, Jr., and V. E. Legg—239S
Elastic switching properties of some square loop materials in toroidal structures. W. C. Seelbach and J. R. Kiseda —135S
Electrodeposited memory elements for a nondestructive memory. T. R. Long—123S
Exchange anisotropy in Cu-Mn and Ag-Mn alloys. J. S. Kouvel—142S
Exchange anisotropy in rock magnetism. W. H. Meiklejohn and R. E. Carter—164S
Exchange anisotropy in the system $Mn_{(1-x)}Cr_xSb$. R. H. Pry, J. S. Kouvel, and E. S. Miksch—162S
Exchange anisotropy memory effect. I. S. Jacobs and P. E. Lawrence—1388
Experimental flux pattern determination in magnetic cores. Robert L. Ward—192S
Explanation for the low-temperature behavior of the anisotropy of iron. W. J. Carr, Jr.—69
External fields from domain walls of cobalt film. B. Kostyshyn, J. E. Brophy, I. Oi, and D. D. Roshon, Jr.—772
Fast switching by domain walls in ferrites. Walter Wiechec and Clinton M. Kelley—131S
Fine structure of Bloch walls. S. Shtrikman and D. Treves—1304L
Finite amplitude electromagnetic waves in gyromagnetic media. B. A. Auld—106S
Flux reversal by noncoherent rotation in magnetic films. K. J. Harte—283S
Flux reversal in soft ferromagnetics. E. M. Gyorgy—110S
High field magnetization study of ferrimagnetic arrangements in chromite spinels. I. S. Jacobs—263S
High-temperature susceptibility of ferrimagnetic spinels. Peter J. Wojtowicz—265S
Hyperfine interactions in magnetic materials by $\gamma$-$\gamma$ angular correlation measurements. M. E. Caspari, S. Frankel, and M. A. Gilleo—320S
Influence of ionic order on the magnetocrystalline anisotropy and crystalline field parameters in lithium ferrite monocrystals. V. J. Folen—166S
Influence of nearby conductors on thin film switching. J. S. Eggenberger—287S
Initial-permeability spectra of microscopic iron-oxide particles. W. F. Brown, Jr., J. F. Hanton, and A. M. Morrish—214S
Initial susceptibility spectra of permalloy films. R. F. Soohoo—218S
Instrumentation applications of inverse-Wiedemann effect. J. A. Granath—178S
"Interaction anisotropy" model of the structure of Alnico magnet alloys. T. O. Paine and F. E. Luborsky—78S
Interaction between high-power microwave losses and magnetic flux reversal. E. M. Gyorgy and F. B. Hagedorn —1775
Interaction of magnetic crystals with radiation in the range $10^4$-$10^6$ $cm^{-1}$. A. M. Clogston—198S
Internal friction anomaly in ferromagnetics and antiferromagnetism near the Curie point. K. P. Belov, G. I. Katayev, and R. Z. Levitin—153S
Internal structure of Bloch walls. S. Shtrikman and D. Treves—147S
Interpretation of the magnetic and crystallographic properties of several iron, nickel, and iron-nickel nitrides. J. B. Goodenough, A. Wold, and R. J. Arnott—342S
Intrinsic and anneal-induced anisotropy in cobalt-substituted *W*-type hexagonal oxides. L. R. Bickford, Jr.— 259S
Investigations into the origin of anisotropy in oblique-incidence films. M. S. Cohen, E. E. Huber, Jr., G. P. Weiss, and D. O. Smith—291S
Ionic ordering effects in the ferromagnetic resonance of lithium ferrite monocrystals. A. D. Schnitzler, V. J. Folen, and G. T. Rado—348S
Localized field permanent magnet arrays. H. L. Stadler— 196S
Long-range magnetic interactions via conduction electrons. Arthur Paskin—318S
Long-term magnetic stability of Alnico and barium ferrite magnets. K. J. Kronenberg and M. A. Bohlmann—82S
Magnetic anisotropy from the magnetostatic modes. I. H. Solt, Jr., and P. C. Fletcher—100S
Magnetic anisotropy in evaporated iron films. E. W. Pugh, J. Matisoo, D. E. Speliotis, and E. L. Boyd—293S
Magnetic anisotropy in ferrimagnetic crystals. R. F. Pearson—160S
Magnetic-form factor of $Fe_3Al$. S. J. Pickart and R. Nathans—372S
Magnetic interactions and distribution of ions in the garnets. S. Geller—30S
Magnetic properties of ferromagnetic superconductors. R. M. Bozorth and D. D. Davis—321S
Magnetic properties of manganese copper alloys. R. Street —310S
Magnetic transitions in $Ti_2O_3$ and $V_2O_3$. P. H. Carr and S. Foner—344S
Magnetic viscosity due to solute atom pairs. I. Theory of the effect. G. Biorci, A. Ferro, and G. Montalenti—2121
Magnetism in medicine. Michael W. Freeman, M.D., Anthony Arrott, and John H. L. Watson—404S
Magnetization of a dilute suspension of a multidomain ferromagnetic. C. P. Bean and I. S. Jacobs—1228
Magnetization of the compound TiFe. M. V. Nevitt—155
Magnetization of the compound TiFe. M. V. Nevitt— 942(E)
Magnetization reversal in uniaxial films near to the preferred direction. E. M. Bradley and M. Prutton—285S
Magneto structural studies on gadolinium-iron alloys. R. C. Vickery, W. C. Sexton, V. F. Novy, and E. V. Kleber—366S
Mechanism of antiferromagnetism in dilute alloys. A. W. Overhauser—317S
Method for measuring iron losses in elliptically polarized magnetic fields. F. J. Young and H. L. Schenk—194S
Microcalorimetric technique for the study of damping and hysteresis in ferromagnetic films. J. R. Mayfield—298S
Millimicrosecond magnetization reversal in thin magnetic films. D. W. Dietrich and W. E. Proebster—281S
Miniature memory planes for extreme environmental conditions. R. Straley, A. Heuer, B. Kane, and G. Tkach —126S
Mobility of edge dislocations in silicon-iron crystals. Dale F. Stein and J. R. Low—362

**Magnetism, General** (*continued*)
Multimode propagation in gyromagnetic rods and its application to traveling-wave devices. J. E. Tompkins, F. Reggia and L. Joseph—176S
Necessary factor for heat treatment of the permalloys in a magnetic field. E. A. Nesbitt, R. D. Heidenreich, and A. J. Williams—228S
Neutron and optical studies of domains in NiO. W. L. Roth—2000
Neutron diffraction investigation of the $Fe_{1-y}S$ system. Joseph T. Sparks, Warren Mead, Albert J. Kirschbaum, and Walter Marshall—356S
Neutron diffraction investigation of the magnetic structure of nickel oxide. H. A. Alperin—354S
Neutron diffraction investigations of the magnetic ordering in rare earth nitrides. M. K. Wilkinson, H. R. Child, J. W. Cable, E. O. Wollan, and W. C. Koehler—358S
New approach to high-speed storage—low flux density materials. W. L. Shevel, Jr., and H. Chang—125S
New material for permanent magnets on a base of Mn and Al. A. J. J. Koch, P. Hokkeling, M. G. v.d. Steeg, and K. J. deVos—75S
New multi-aperture magnetic logic element. David R. Bennion—129S
Nucleation experiments on thin magnetic MnBi films. Ludwig Mayer—384S
Observation of domains in iron whiskers under high fields. C. A. Fowler, Jr., E. M. Fryer, and David Treves—2267
Observation of Néel walls in thin films. Harvey Rubinstein, Harrison W. Fuller, and Murray E. Hale—437(L)
Observations on MnBi films during heat treatment. Ludwig Mayer—346
On the resolution of Brown's paradox. S. Shtrikman and D. Treves—72S
Operation of magnetic film parametrons in the 100- to 500-Mc region. A. V. Pohm, A. A. Read, R. M. Stewart, and R. F. Schauer—119S
Ordering in the intermediate phases TiFe, TiCo, and TiNi. Paul Pietrokowsky and Frank G. Youngkin—1763
Paramagnetic resonance absorption of nickel in sapphires. S. A. Marshall and A. R. Reinberg—336S
Paramagnetic resonance of Yb in aluminum and gallium garnets. John W. Carson and Robert L. White—53S
Paramagnetic susceptibilities of Fe and Fe-Si alloys. Sigurds Arajs and D. S. Miller—986
Particle interaction in magnetic recording tapes. J. G. Woodward and E. Della Torre—56
Permanent magnet leadage permeance evaluation based on polar radiation analogy. J. E. Foy and R. J. Parker—188S
Plasma propulsion by a rapidly varying magnetic field. Milton M. Klein and Keith A. Brueckner—1437
Practical hysteresigraph. R R. Bockemuehl and W. E. Sargeant—180S
Precise measurement of magnetic form factors. Robert Nathans—350S
Preferred orientation and ordering in evaporated films of Fe, Ni, and Fe-Ni. R. F. Adamsky—289S
Preparation of large calcium-tungstate crystals containing paramagnetic ions for maser applications. K. Nassau and L. G. Van Uitert—1508(L)
Production of very high magnetic fields by implosion. C. M. Fowler, W. B. Garn, and R. S. Caird—588
Promotion of cubic grain growth in 3% silicon iron by control of annealing atmosphere composition. Dale Kohler—408S
Rictometer system for calibrating transmitters of remote indicating compasses. L. I. Mendelsohn—183S
Rigorous solution of eddy current losses in rectangular bar for single plane domain wall model. Paul D. Agarwal and L. Rabins—246S
Roll magnetic anisotropy of iron-aluminum crystals. Soshin Chikazumi—158S
Scattering of electromagnetic waves from the infinitely long magnetized cylindrical plasma. P. M. Platzman and H. T. Ozaki—1597
Simple recording torque magnetometer. P. W. Neurath—184S
Single-crystal magnetic anisotropy and magnetostriction studies in iron-base alloys. R. C. Hall—1037
Some physical properties of thin magnetic films. A. C. Moore and A. S. Young—279S
"Spontaneous magnetic anisotropy" in polycrystalline thin films. W. Andra, Z. Malek, W. Schuppel, and O. Stemme—422
Spontaneous magnetizations of some gadolinium alloys. Sigurds Arajs and D. S. Miller—213(L)
Square loop properties of copper-manganese ferrites. R. S. Weisz and D. L. Brown—269S
State of *d* electrons in transition metals. Conyers Herring—3S
Studies in partial switching of ferrite cores. Roger H. Tancrell and Robert E. McMahon—762
Switching behavior of low-remanence ferrite. F. B. Hagedorn and E. M. Gyorgy—398S
Temperature dependence of anisotropy and saturation magnetization in iron and iron-silicon alloys. C. D. Graham, Jr.—150S
Temperature dependence of the saturation magnetization of nickel films of thickness less than 100 A. C. A. Neugebauer—152S
Tetrahedral junction. Jerald A. Weiss—168S
Theory of the low-lying states of some rare earth compounds. G. T. Trammell—362S
Transfer function and error probability of a digital magnetic tape recording system. John Wenchung Hung—396S
Transmission electron diffraction of Alnico V. K. J. Kronenberg—80S
Use of magnetostatic modes as a research tool. Robert L. White—86S

**Masers and Parametric Amplifiers**
Charred dextrose as a paramagnetic resonance standard. R. H. Hoskins and R. C. Pastor—1506(L)
Chromium-doped titania as a maser material. H. J. Gerritsen, S. E. Harrison, and H. R. Lewis—1566
Comments on "Diode capacitors for parametric amplification" by R. C. Knechtli and R. D. Weglein. K. E. Mortenson—1135(L)
Cw millimeter wave maser using $Fe^{3+}$ in $TiO_2$. S. Foner and L. R. Momo—742(L)
Diode capacitors for parametric amplification. R. C. Knechtli and R. D. Weglein—1134(L)
Effect of nuclear polarization on the behavior of solid state masers. G. Makhov, L. G. Cross, R. W. Terhune, and J. Lamble—936(L)
Focusing molecular beams of $NH_3$. J. C. Helmer, F. B. Jacobus, and P. A. Sturrock—458
High-power effects in ferrimagnetic resonance. P. E. Seiden and H. J. Shaw—432(L)
Inversions by fast passage in a multilevel spin system. P. E. Wagner, J. G. Castle, Jr., and P. F. Chester—1498(L)
Maser behavior: temperature and concentration effects. T. H. Maiman—222(L)
Megavolt electronics Cerenkov coupler for the production of millimeter and submillimeter waves. Paul D. Coleman and Charles Enderby—1695(L)

Microwave properties of nonstoichiometric polycrystalline yttrium iron garnet. P. E. Seiden, C. F. Kooi and J. M. Katz—1291
Noise figure and gain of parametric converters. H. Heffner and G. Wade—2316(L)
Noise temperature measurement on a traveling-wave maser preamplifier. R. W. DeGrasse and H. E. D. Scovil—443(L)
On the possibility of maser action in nuclear quadrupole systems. R. E. Donovan and A. A. Vuylsteke—614(L)
Operating characteristics of a molecular-beam maser. H. G. Venkates and M. W. P. Strandberg—396
Operation of a chromium doped titania maser. H. J. Gerritsen and H. R. Lewis—608(L)
Parametric amplification along nonlinear transmission lines. Rolf Landauer—479
Parametric amplifier theory for plasmas and electron beams. G. S. Kino—1449
Parametric diode figure of merit and optimization. K. E. Mortenson—1207
Preparation of large calcium-tungstate crystals containing paramagnetic ions for maser applications. K. Nassau and L. G. Van Uitert—1508(L)
Proposed molecular amplifier and coherent generator for millimeter and submillimeter waves. Walter Gordy and Monroe Cowan—941(L)
Pulsed field millimeter wave maser. L. R. Momo, R. A. Myers, and S. Foner—443(L)
Spontaneous emission from an inverted spin system. Amnon Yariv—740(L)
Submillimeter wave maser. Saul M. Bergmann—275
Theory of fast-wave parametric amplification. Curtis C. Johnson—338
Time discrimination in solid-state infrared quantum counters. J. V. Jelley—1145

**Mass Spectrometry**

Charged-particle orbits in varying magnetic fields. E. I. Gordon—1187
Use of the omegatron in the determination of parameters affecting limiting pressures in vacuum devices. David Lichtman—1213

**Mathematics**

Alternative forms of some exponential and power functions for graphical representation. C. C. Harris—215(L)
Alternative forms of some exponential and power functions for graphical representation. C. C. Harris—942(E)
Aperture fields in the diffraction by a slit. Hwei-Piao Hsu—1842
Bounds on low energy scattering parameters. Larry Spruch and Leonard Rosenberg—2104
Conservation laws of uniform linear homogeneous systems. M. C. Pease—1988
Diffraction by a slit. Robert Plonsey and Hwei-Piao Hsu—445(E)
Monte Carlo calculation of molecular flow rates through a cylindrical elbow and pipes of other shapes. D. H. Davis—1169
Monte Carlo calculations of the motions of electrons in helium. T. Itoh and T. Musha—744(L)
Optical studies of the diffraction of water waves by circular and thin elliptic cylinders. Richard Barakat and Robert Barakat—474
Phase oscillations in high current synchrotrons. Irvin G. Henry—1338
Resistance to potential flow through a cubical array of spheres. Robert E. Meredith and Charles W. Tobias—1270
Scattering by nonspherical particles. J. Mayo Greenberg—82
Scattering of a plane transverse wave by a spherical obstacle in an elastic medium. Norman G. Einspruch, E. J. Witterholt, and Rohn Truell—806
Scattering of electromagnetic waves from the infinitely long magnetized cylindrical plasma. P. M. Platzman and H. T. Ozaki—1597
Surface wave excitation and propagation. Joseph B. Keller and Frank C. Karal, Jr.—1039
Three-dimensional space charge flow. Jorge Rosenblatt—1371

**Metallurgy, General**

Alloying behavior of thin bimetal films, simultaneously or successively deposited. Richard B. Belser—562
Behavior of individual dislocations in strain-hardened LiF crystals. J. J. Gilman and W. G. Johnston—687
Bounds on the nonlinear diffusion controlled growth rate of spherical precipitates. J. A. Morrison and H. L. Frisch—1621
Bulk densities of separated copper isotopes. D. D. Snyder—440(L)
Cleavage whiskers. John D. Venables—1503(L)
Creep of $Al_2O_3$ single crystals. Roger Chang—484
Direct observation of antiphase domain boundaries in the $AuCu_3$ superlattice. M. J. Marcinkowski and R. M. Fisher—1686(L)
Dislocation etch pits on $p$-type lead telluride. B. B. Houston and Marriner K. Norr—615(L)
Dislocation etch pits on the {111} and {$\bar{1}\bar{1}\bar{1}$} surfaces of InSb. Harry C. Gatos and Mary C. Lavine—743(L)
Dislocation multiplication in lithium fluoride crystals. W. G. Johnston and J. J. Gilman—632
Dislocation ribbons and stacking faults in graphite. P. Delavignette and S. Amelinckx—1691(L)
Dislocations in indented magnesium oxide crystals. A. S. Keh—1538
Ductility of NaCl crystals. Robert G. Greenler and William S. Rothwell—616(L)
Elastic constants of bismuth. Yakov Eckstein, A. W. Lawson, and Darrell H. Reneker—1534
Elastic constants of single-crystal aluminum antimonide. D. I. Bolef and M. Menes—1426
Electron microscopic study of thin films of the aluminum-copper eutectic prepared by a melting method. Noboru Takahashi—1287
Etch pits in gallium arsenide. J. L. Richards and A. J. Crocker—611(L)
Etch pits in pyrolytic graphite. Aram Tarpinian and George E. Gazza—1657
Evidence for dislocation reactions in copper. F. W. Young, Jr., and T. S. Noggle—604
Factors affecting the ductility and strength of NaCl single crystals tested in flexure. C. A. Stearns, A. E. Pack, and R. A. Lad—231
Flow of magnesium oxide single crystals. D. S. Thompson and J. P. Roberts—433(L)
Formation and initial growth of single-asperity solid-state bonds. F. C. Holden, J. B. Melehan, H. R. Ogden, and R. I. Jaffee—670
Generation of dislocations by an electric field in MgO. E. Mendel and S. Weinig—738(L)
Grain boundaries in germanium. Richard S. Wagner and Bruce Chalmers—581
Grain boundary and lattice diffusion in polycrystalline bodies. H. S. Levine and C. J. MacCallum—595
Growth from the melt. I. Influence of surface intersections in pure metals. G. F. Bolling and W. A. Tiller—1345
Growth of GaAs crystals in the (111) polar direction. P. L. Moody, H. C. Gatos, and M. C. Lavine—1696(L)
Heat treatment effects in indium arsenide. J. T. Edmond and C. Hilsum—1300(L)

**Metallurgy, General** (*continued*)
Heat treatment of gallium arsenide. J. T. Edmond—1428
Hot working of Alnico 5 alloys. C. L. Kolbe and D. L. Martin—84S
Improvements on the pedestal method of growing silicon and germanium crystals. W. C. Dash—736(L)
Irradiation effects and short-range order in fused silica and quartz. R. A. Weeks and C. M. Nelson—1555
Kinetics of sintering of sodium chloride in the presence of an inert gas. J. B. Moser and D. H. Whitmore—488
Low-temperature transport properties of commercial metals and alloys. II. Aluminums. Robert L. Powell, William J. Hall, and Hans M. Roder—496
Low-temperature transport properties of commercial metals and alloys. III. Gold-cobalt. Robert L. Powell, M. D. Bunch, and Edward F. Gibson—504
Low-temperature transport properties of commercial metals and alloys. IV. Reactor grade Be, Mo, and W. Robert L. Powell, James L. Harden, and Edward F. Gibson—1221
Manipulation of cesium. P. Leliak—609(L)
Metastable electron compound in Ag-Ge alloys. Pol Duwez, R. H. Willens, and W. Klement, Jr.—1137(L)
Metastable solid solutions in the gallium-antimonide-germanium pseudobinary system. Pol Duwez, R. H. Willens, and W. Klement, Jr.—1500(L)
On the behavior of thermal vacancies in pure aluminum. Doris Kuhlmann-Wilsdorf and H. G. F. Wilsdorf—516
On the kinetics and mechanism of the precipitation of lithium from germanium. J. R. Carter, Jr., and R. A. Swalin—1191
Ordering in the intermediate phases TiFe, TiCo, and TiNi. Paul Pietrokowsky and Frank G. Youngkin—1763
Orientation density and its use in quantitative texture studies. C. G. Dunn and J. L. Walter—827
Oxygen in nickel. L. H. Germer and C. D. Hartman—2085
Precipitation in silicon crystals containing aluminum. R. Bullough, R. C. Newman, J. Wakefield, and J. B. Willis—707
Precipitation of copper in gallium arsenide. J. M. Whelan and C. S. Fuller—1507(L)
Precision lattice parameter measurements of cold-worked metals. Robert Asimow—410
Prediction of fatigue life. A. M. Freudenthal—2196
Preparation of large area single-crystal cuprous oxide. Robert S. Toth, Rein Kilkson, and Dan Trivich—1117
Production and demonstration of atomically clean metal surfaces. H. D. Hagstrum and C. D'Amico—715
Propagation mechanism of germanium dendrites. D. R. Hamilton and R. G. Seidensticker—1165
Propagation of large amplitude waves in annealed aluminum. James F. Bell—277
Range of radiation induced primary knock-ons in the hard core approximation. D. K. Holmes and G. Leibfried—1046
Recovery of internal friction in aluminum after plastic deformation. Ivar Holwech—928
Regelation, surface diffusion, and ice sintering. W. D. Kingery—833
Solution-precipitation deformation under an applied stress. W. D. Kingery and M. P. Lepie—610(L)
Surface deformation of aluminum in fatigue. J. C. Grosskreutz and C. M. Gosselin—1127(L)
Tensile properties of thin, evaporated gold films. C. A. Neugebauer—1096
Tensile strength of pyrolytic graphite up to 2750°C. H. E. Martens and L. D. Jaffe—1122(L)
Torsion induced recrystallization of molybdenum and tungsten filaments. F. E. Gifford and E. A. Coomes—235
Velocity behavior of a growing crack. E. N. Dulaney and W. F. Brace—2233
X-ray examination of brittle fractures in extruded chromium. C. W. Weaver and K. A. Gross—626
X-ray reflection studies of the anneal and oxidation of some thin solid films. N. Wainfan and L. G. Parratt—1331

**Noise**
Current noise due to ohmic contacts on cadmium sulfide. James J. Brophy and Robert J. Robinson—1343
Intervalley noise. P. J. Price—949
Microwave noise from low-pressure arcs. R. M. Hill and S. K. Ichiki—735(L)
Noise and signal response in lead sulfide photoconductive films. H. E. Spencer—505
Noise temperature measurement on a traveling-wave maser preamplifier. R. W. DeGrasse and H. E. D. Scovil—443(L)
On the nonconservation of noise parameters in multivelocity beams. J. Berghammer and S. Bloom—454
Partition noise in electron beams at microwave frequencies. A. Ashkin and L. D. White—1351
Theory of a negative-resistance transmission line amplifier with distributed noise generators. K. K. N. Chang—871
Transport of noise at microwave frequencies through a space-charge-limited diode. W. E. Vivian—957

**Nuclear Physics**
Backscattering of carbon-14 beta radiation. George L. Gaines, Jr.—741(L)
Bounds on low energy scattering parameters. Larry Spruch and Leonard Rosenberg—2104
Effect of fast neutron bombardment at various temperatures upon the Young's modulus and internal friction of copper. D. O. Thompson and V. K. Paré—528
Effect of nuclear polarization on the behavior of solid state masers. G. Makhov, L. G. Cross, R. W. Terhune, and J. Lambe—936(L)
Magnetic viscosity due to solute atom pairs. I. Theory of the effect. G. Biorci, A. Ferro, and G. Montalenti—2121
Nuclear resonance in ferromagnetic cobalt. A. M. Portis and A. C. Gossard—205S
Theoretical and experimental study of the back-scattering cross section of an infinite ribbon. Michael S. Macrakis—2261

**Optical Properties**
Correlation between certain extinction bands of solids and plasma resonance. B. R. Gossick—650
Depolarized components of light scattered by glasses. II. Influence of nonannealable strains on the scattering. Martin Goldstein—1697(E)
Optical absorption by free carriers in a semiconductor containing a dispersed colloidal phase. B. R. Gossick—648
Optical constants of germanium in the region 0–10 ev. M. P. Rimmer and D. L. Dexter—775
Optical observations concerning the polymorphic transition in the potassium halides. S. Wiederhorn and H. G. Drickamer—1666
Optical studies of the diffraction of water waves by circular and thin elliptic cylinders. Richard Barakat and Robert Barakat—474
Print-out process in photographic emulsion grains. J. F. Hamilton and L. E. Brady—609(L)

Small angle scattering investigation of Ludox mixtures. Robert H. Bragg, Irene Corvin, and John W. Buttrey —1183

**Phase Transformations**

Broadband reciprocal ferrite phase shifters. T. D. Geiszler and R. A. Henschke—174S

Influence of crystallographic orientation on the charge formation during phase changes in solids. S. Mascarenhas and L. G. Freitas—1684

New complex phase in the copper-gold system. R. E. Scott—2112

Ordering in the intermediate phases TiFe, TiCo, and TiNi. Paul Pietrokowsky and Frank G. Youngkin—1763

**Plasma Physics**

Absorption and reflection spectrum of a plasma. W. D. Hershberger—417

Alkali vapor plasmas. M. A. Hakeem and Harry S. Robertson—2063(L)

Asymmetrical triple probe method for determining energy distribution of electron in plasma. Takayoshi Okuda and Kenzo Yamamoto—158

Circuit dynamics of the pinch. J. Killeen and B. A. Lippmann—1549

Comments on article by Cook. M. H. Miller—607(L)

Correlation between certain extinction bands of solids and plasma resonance. B. R. Gossick—650

Determination of streaming velocity and the flow of heat and mass in high-current arcs. T. B. Reed—2047

Effect of gas pressure and cone angle on the velocities of electrically excited shock waves. Philip J. Hart—436(L)

Efficiency of the plasma thermocouple. H. W. Lewis and J. R. Reitz—723

Experimental investigation of a high-energy density, high-pressure arc plasma. Edward A. Martin—255

Experimental investigations of the cesium plasma cell. W. A. Ranken, G. M. Grover, and E. W. Salmi—2140

Forces on ion-bombarded electrodes in a low pressure plasma. G. K. Wehner—1392

Microwave determination of plasma density profiles. Charles B. Wharton and Donald M. Slager—428

Negative glow plasma as a cathode for electron tubes. J. M. Anderson and L. A. Harris—1463

Numerical calculation of absolute bremsstrahlung intensity for a fully ionized dissociated hydrogenic gas. G. Sargent Janes and H. Koritz—525

Parametric amplifier theory for plasmas and electron beams. G. S. Kino—1449

Plasma propulsion by a rapidly varying magnetic field. Milton M. Klein and Keith A. Brueckner—1437

Production of very high magnetic fields by implosion. C. M. Fowler, W. B. Garn, and R. S. Caird—588

Scattering of electromagnetic waves from an infinitely long magnetized cylindrical plasma. P. M. Platzman and H. T. Ozaki—1597

Scattering of radiation by a plasma. Forrest I. Boley—1692(L)

Surface deformation of aluminum in fatigue. J. C. Grosskreutz and C. M. Gosselin—1127(L)

Ultra-high-speed photographs refuting "cohesion in plasma." W. C. Davis and A. W. Campbell—1225

**Plastic Deformation**

Creep of $Al_2O_3$ single crystals. Roger Chang—484

Dislocation arrays in depth and recrystallization produced by surface deformation of single crystals of copper at high temperature. John M. Bailey and Allan T. Gwathmey—215(L)

Dislocation structure and the formation and strength of sodium chloride whiskers. W. W. Webb—194

Dislocations in indented magnesium oxide crystals. A. S. Keh—1538

Ductility of NaCl crystals. Robert G. Greenler and William S. Rothwell—616(L)

Effect of aging time after cleavage on the plasticity of MgO single crystals. Carl A. Stearns—2317(L)

Factors affecting the ductility and strength of NaCl single crystals tested in flexure. C. A. Stearns, A. E. Pack, and R. A. Lad—231

Flow of magnesium oxide single crystals. D. S. Thompson and J. P. Roberts—433(L)

On the strength of glass in water vapor. F. R. L. Schoening—1779

Radiation limited dislocation motion in crystals. Robb Thomson—617(L)

Recovery of internal friction in aluminum after plastic deformation. Ivar Holwech—928

Regelation, surface diffusion, and ice sintering. W. D. Kingery—833

Reviving the classical theory of friction by a modern dislocation theory of deformation revision. John H. Dismant—221(L)

Reviving the classical theory of friction by a modern dislocation theory of deformation revision. John H. Dismant—942(E)

Solution-precipitation deformation under an applied stress. W. D. Kingery and M. P. Lepie—610(L)

Tensile strength of pyrolytic graphite up to 2750°C. H. E. Martens and L. D. Jaffe—1122(L)

**Polymers**

Chain folding and free energy density in polymer crystals. Anton Peterlin—1934

Defects in polyethylene crystals. W. P. Slichter—1865

Determination of the anisotropy of bond-polarizability of liquids using flow-birefringence measurements. W. Philippoff—1899

Effect of orientation on strength of a model solid. A. Robinson, J. E. Osborn, and C. C. Hsiao—1602

Effect of pressure on the dynamic shear behavior of polyisobutylene. A. W. Nolle—1694(L)

Effect of reactor irradiation on the tensile strength of uniaxially oriented polyethylene terephthalate. C. C. Hsiao and S. T. Chow—1869

Effect of temperature and reactor irradiation on the strength of biaxially oriented polyethylene terephthalate. A. Haynes and C. C. Hsiao—1871

Experimental study of thermal diffusion in dilute solutions of high polymers. Frank C. Whitmore—1858

Flow of polyethylene into a capillary. E. B. Bagley and A. M. Birks—556

Formation of thin polymer films by electron bombardment. Robert W. Christy—1680

Gamma-ray induced conductivity in polyethylene coaxial cable. Kichinosuke Yahagi and Akibumi Danno—734(L)

Hollow pyramidal crystals of polyethylene and a mechanism of growth. Walter D. Niegisch and Paul R. Swan —1906

Hooke's law in shear and polymer melt fracture. E. B. Bagley—1126(L)

Kinetic theory of thermal diffusion in dilute polymer solutions. Joe S. Ham—1853

Lattice displacements by fast electrons. W. Dale Compton and George W. Arnold—621

Longitudinal wave propagation in stretched polymers. Peter Mason—1706

Low angle x-ray diffraction of fibrous polyethylene. A. S. Posner, L. Mandelkern, C. R. Worthington, and A. F. Diorio—536

Measurement of orientation in polypropylene film. Zigmond W. Wilchinsky—1969

**Polymers** (*continued*)
Morphology of polymer single crystals. D. H. Reneker and P. H. Geil—1916
NMR absorption in teflon fibers. D. Hyndman and G. F. Origlio—1849
Photoelastic properties of polystyrene in the glassy state. III. Styrene derivatives and copolymers. J. F. Rudd and R. D. Andrews—818
Photographic light scattering by polyethylene films. Richard S. Stein and Marion B. Rhodes—1873
Rolling friction of polymeric materials. I. Elastomers. Donald G. Flom—306
Simple radiant heating method for determining the thermal diffusivity of cellulosic materials. Stanley B. Martin —1101
Solubilities and diffusivities of nitrogen in polyethylene. J. L. Lundberg, M. B. Wilk, and M. J. Huyett—1131(L)
Stress as a reduced variable: Stress relaxation of SBR rubber at large strains. Robert F. Landel and Paul J. Stedry—1885
Theoretical calculation of the birefringence of polypropylene crystals. D. A. Keedy, J. Powers, and R. S. Stein—1911
Time and temperature dependence of the ultimate properties of an SBR rubber at constant elongations. Thor L. Smith and Paul J. Stedry—1892
Wave functions and energy eigenvalues for the polytetrafluoroethylene chain. Yoh-Han Pao and R. F. Bjorklund—1925

**Radiation Effects**
Backscattering of carbon-14 beta radiation. George L. Gaines, Jr.—741(L)
Beta particle transmission currents in solid dielectrics. Bernhard Gross, Arthur Bradley, and Arthur P. Pinkerton—1035
Characteristic energy losses of electrons in carbon. Lewis B. Leder and J. A. Suddeth—1422
Defects in dislocations produced by focusing collisions in fcc lattices. G. Leibfried—117
Determination of dose rates from beta transmission currents. Arthur Bradley—1826(L)
Diffusion of deuterium in deuteron-irradiated copper. Mark T. Robinson, A. L. Southern, and William R. Willis—1474
Displacement of the sulfur atom in CdS by electron bombardment. B. A. Kulp and R. H. Kelley—1057
Drift mobility in neutron irradiated *n*-type germanium. W. H. Closser—1693(L)
Effect of applying a magnetic field during neutron irradiation on the magnetic properties of Fe-Ni alloys. A. I. Schindler and E. I. Salkovitz—2455
Effect of electron irradiation and subsequent thermal treatment on Young's modulus of copper. A. Sosin and L. L. Bienvenue—249
Effect of fast neutron bombardment at various temperatures upon the Young's modulus and internal friction of copper. D. O. Thompson and V. K. Paré—528
Effects of irradiation on the thermal conductivity of synthetic sapphire. R. Berman, E. L. Foster, B. Schneidmesser, and S. M. A. Tirmizi—2156
Electron damage in mica. T. J. Seed—1300(L)
Forces on ion-bombarded electrodes in a low pressure plasma. G. K. Wehner—1392
Formation of thin polymer films by electron bombardment. Robert W. Christy—1680
Gamma irradiation of silicon. I. Levels in *n*-type material containing oxygen. E. Sonder and L. C. Templeton—1279
Gamma-ray induced conductivity in polyethylene coaxial cable. Kichinosuke Yahagi and Akibumi Danno—734(L)
Heating in liquid helium resulting from neutron and gamma bombardment by a fission source. M. G. Chasanov—733(L)
High-energy sputtering. O. C. Yonts, C. E. Normand, and Don E. Harrison—447
Influence of irradiation with $\beta$ rays on the electrification of KCl crystals. Anna Szaynok—451
Ion-bombardment etching of synthetic fibers. Franklin R. Anderson and V. F. Holland—1516
Irradiation effects and short-range order in fused silica and quartz. R. A. Weeks and C. M. Nelson—1555
Large temperature range annealing. William Primak—1524
Mechanism for the production of $F$ centers in NaCl by irradiation with gamma rays. J. H. Crawford, Jr., and F. W. Young, Jr.—1688(L)
Microscopic study of neutron-irradiated germanium. B. B. Meckel, E. G. K. Schwarz, and R. A. Swalin—1299(L)
Monoenergetic neutron irradiation of germanium. O. L. Curtis, Jr., and J. W. Cleland—423
On the neutron bombardment reduction of transistor current gain. J. W. Easley and J. A. Dooley—1024
On the temperature of an object irradiated with electrons. S. Yamaguchi—1825(L)
Photoeffects in nonuniformly irradiated *p-n* junctions. Gerald Lucovsky—1088
Radiation limited dislocation motion in crystals. Robb Thomson—617(L)
Range of radiation induced primary knock-ons in the hard core approximation. D. K. Holmes and G. Leibfried—1046
Specific ionization measurements and energy requirements for $F$-center formation. R. D. Jordan and R. S. Alger —747
Study of irradiation effects and the $H^2+H^2$ buildup in tantalum. A. F. Gabrysh, H. Eyring, M. E. Wadsworth, G. S. Baker, and T. Ree—1785
Transitory electrical properties of *n*-type germanium after a neutron pulse. H. J. Stein—1309

**Rheology**
Effect of pressure on the dynamic shear behavior of polyisobutylene. A. W. Nolle—1694(L)
Hooke's law in shear and polymer melt fracture. E. B. Bagley—1126(L)
Ion-bombardment etching of synthetic fibers. Franklin R. Anderson and V. F. Holland—1516
Photoelastic properties of polystyrene in the glassy state. III. Styrene derivatives and copolymers. J. F. Rudd and R. D. Andrews—818

**Semiconductor Devices**
Analog study of large-signal high-frequency diodes. C. L. Andrews—1431
Anomalous barrier capacitance in *p-n* junctions of InSb. C. A. Lee and G. Kaminsky—1717
Comments on "Diode capacitors for parametric amplification" by R. C. Knechtli and R. D. Weglein. K. E. Mortenson—1135(L)
Diode capacitors for parametric amplification. R. C. Knechtli and R. D. Weglein—1134(L)
Dipole mode of minority carrier diffusion with reference to point contact rectification. B. R. Gossick—29
Effect of temperature on photovoltaic solar energy conversion. Joseph J. Wysocki and Paul Rappaport—571
Fast neutron bombardment of germanium and silicon Esaki diodes. J. W. Easley and R. R. Blair—1772
Improvement of semiconductor surfaces by low melting glasses, possibly functioning as ion getters. S. S. Flaschen, A. David Pearson, and I. L. Kalnins—431(L)

Influence of transverse modes on photoconductive decay in filaments. J. S. Blakemore and K. C. Nomura—753
Ion drift in an *n-p* junction. E. M. Pell—291
Metal precipitates in silicon *p-n* junctions. A Goetzberger and W. Shockley—1821
Microwave measurement of semiconductor carrier lifetimes. H. A. Atwater—938(L)
Minority carrier recombination in a cylindrical transistor base region. David P. Kennedy—954
On the neutron bombardment reduction of transistor current gain. J. W. Easley and J. A. Dooley—1024
Oscillistor—New type of semiconductor oscillator. R. D. Larrabee and M. C. Steele—1519
Parametric diode figure of merit and optimization. K. E. Mortenson—1207
Photoeffects in nonuniformly irradiated *p-n* junctions. Gerald Lucovsky—1088
Photoemission in the photovoltaic effect in cadmium sulfide crystals. Richard Williams and Richard H. Bube—968
Photovoltaic effect derived from the Carnot cycle. A. Rose—1640
Spreading resistance in cylindrical semiconductor devices. David P. Kennedy—1490
Transistor with base containing a dispersed colloidal phase. B. R. Gossick—745(L)
Uniform avalanche effect in silicon three-layer diodes. A. Goetzberger—2260
Uniform silicon *p-n* junctions. I. Broad area breakdown. R. L. Batdorf, A. G. Chynoweth, G. C. Dacey, and P. W. Foy—1153
Uniform silicon *p-n* junctions. II. Ionization rates for electrons. A. G. Chynoweth—1161

**Semiconductors**

Anomalous Hall effect in $AgSbTe_2$. R. Wolfe, J. H. Wernick, and S. E. Haszko—1959
Anomalous surface channels on silicon *p-n* junctions. Raymond Solomon—1791
Behavior of InSb surfaces during heat treatment. D. Haneman—217(L)
Chlorine and iodine as impurities in InAs and GaP. G. R. Antell—1686(L)
Current noise due to ohmic contacts on cadmium sulfide. James J. Brophy and Robert J. Robinson—1343
Damaged layers and crystalline perfection in the {111} surfaces of *III-V* intermetallic compounds. E. P. Warekois, M. C. Lavine, and H. C. Gatos—1302(L)
Detection of growth striations in germanium crystals. Albert C. English—1498(L)
Device for measurement of the electrical properties of $Bi_2Se_3$ at elevated temperatures. Mac J. Smith, E. S. Kirk, and C. W. Spencer—1504(L)
Diffusion of boron into silicon. A. D. Kurtz and R. Yee —303
Diffusion of copper into AlSb. R. H. Wieber, H. C. Gorton, and C. S. Peet—608(L)
Dipole mode of minority carrier diffusion with reference to point contact rectification. B. R. Gossick—29
Dislocation etch pits on *p*-type lead telluride. B. B. Houston and Marriner K. Norr—615(L)
Dislocation etch pits on the {111} and {$\bar{1}\bar{1}\bar{1}$} surfaces of InSb. Harry C. Gatos and Mary C. Lavine—743(L)
Dislocations in silicon carbide. S. Amelinckx, G. Strumane, and W. W. Webb—1359
Dislocations in two types of CdS crystals. D. C. Reynolds and S. J. Czyzak—94
Displacement of the sulfur atom in CdS by electron bombardment. B. A. Kulp and R. H. Kelley—1057
Drift mobility in neutron irradiated *n*-type germanium. W. H. Closser—1693(L)
Effect of Cu precipitation on dislocation etch pits in Ge. Howard Savage—1472
Effect of Li-B ion pairing on $Li^+$ ion drift in Si. E. M. Pell—1675
Effect of oxide layers on the diffusion of phosphorus into silicon. R. B. Allen, H. Bernstein, and A. D. Kurtz—334
Effect of the polarity of the *III-V* intermetallic compounds on etching. J. W. Faust, Jr., and A. Sagar—331
Esaki diode in InSb. R. L. Batdorf, G. C. Dacey, R. L. Wallace, and D. J. Walsh—613(L)
Etch pits in gallium arsenide. J. L. Richards and A. J. Crocker—611(L)
Field effect modulation of photoconductance in a quasi-intrinsic semiconductor. R. R. Bockemuehl—2255
Field induced photoemission and hot-electron emission from germanium. R. E. Simon and W. E. Spicer—1505(L)
Filled and empty dangling bonds in *III-V* compounds. D. B. Holt—2231
Formation of cesium antimonide. I. Electrical resistivity of the film of cesium-antimony system. Kiyoshi Miyake —76
Gamma irradiation of silicon. I. Levels in *n*-type material containing oxygen. E. Sonder and L. C. Templeton—1279
Germanium crystals grown from hollow cylindrical seeds. R. C. Frank and J. E. Thomas, Jr.—1689(L)
Growth of atomically flat surfaces on germanium dendrites. R. L. Longini, A. I. Bennett, and W. J. Smith —1204
Growth of GaAs crystals in the ⟨111⟩ polar direction. P. L. Moody, H. C. Gatos, and M. C. Lavine—1696(L)
Growth of gallium arsenide by horizontal zone melting. J. L. Richards—600
Growth of InSb crystals in the ⟨111⟩ polar direction. H. C. Gatos, P. L. Moody, and M. C. Lavine—212(L)
Hall field relaxation in semiconductors at high frequency. Keith S. Champlin—1770
Heat treatment effects in indium arsenide. J. T. Edmond and C. Hilsum—1300(L)
Heat treatment of gallium arsenide. J. T. Edmond—1428
High-temperature Hall coefficient in GaAs. L. W. Aukerman and R. K. Willardson—939(L)
Impurity effects upon mobility in silicon. R. A. Logan and A. J. Peters—122
Influence of arsenic pressure on the doping of gallium arsenide with germanium. J. O. McCaldin and Roy Harada—2065(L)
Interaction between arsenic and aluminum in germanium. J. O. McCaldin—89
Intervalley noise. P. J. Price—949
Ion-bombardment etching of silicon and germanium. I. A. Dillon, Jr., and R. M. Oman—26
Ion drift in an *n-p* junction. E. M. Pell—291
Metastable solid solutions in the gallium antimonide-germanium pseudobinary system. Pol Duwez, R. H. Willens, and W. Klement, Jr.—1500(L)
Microscopic study of neutron-irradiated germanium. B. B. Meckel, E. G. K. Schwarz, and R. A. Swalin—1299(L)
Microwave measurement of semiconductor carrier lifetimes. H. A. Atwater—938(L)
Minority carrier current in a linearly graded drift field. David P. Kennedy—218(L)
Monoenergetic neutron irradiation of germanium. O. L. Curtis, Jr., and J. W. Cleland—423
On the kinetics and mechanism of the precipitation of lithium from germanium. J. R. Carter, Jr., and R. A. Swalin—1191
On the observation of macroscopic spirals on gallium arsenide surfaces. Warren J. Little and Kathryn A. McCarthy—1298(L)

**Semiconductors** (*continued*)
Optical absorption by free carriers in a semiconductor containing a dispersed colloidal phase. B. R. Gossick—648
Optical constants of germanium in the region 0–10 ev. M. P. Rimmer and D. L. Dexter—775
Orientation-dependent dissolution of germanium. F. C. Frank and M. B. Ives—1996
Origin of the "first-order structure" of CP4-etched Ge surfaces. G. Bonfiglioli, A. Ferro, and A. Mojoni—684
Oscillations in germanium with an applied pulsed electric field. M. Cardona and W. Ruppel—1826(L)
Photoelectronic analysis of high resistivity crystals: (a) GaAs, (b) $Sb_2S_3$. Richard H. Bube—315
Piezoresistive effect in *p*-type PbTe. Lewis E. Hollander and T. J. Diesel—692
*p* layers on vacuum heated silicon. F. G. Allen, T. M. Buch, and J. T. Law—979
Precipitation in silicon crystals containing aluminum. R. Bullough, R. C. Newman, J. Wakefield, and J. B. Willis—707
Precipitation of copper in gallium arsenide. J. M. Whelan and C. S. Fuller—1507(L)
Propagation mechanism of germanium dendrites. D. R. Hamilton and R. G. Seidensticker—1165
Properties of *p*-type GaAs prepared by copper diffusion. F. D. Rosi, D. Meyerhofer, and R. V. Jensen—1105
Reciprocity law failure in ZnO and Se. Joze Kostelec—441(L)
Several new methods to measure the thermal diffusivity of semiconductors. J. H. Becker—612(L)
Some electrical properties of amorphous selenium films. Richard A. Fotland—1558
Some properties of zinc sulfide crystals grown from the melt. Arrigo Addamiano and Manuel Aven—36
Statistics of the occupation of dislocation acceptors (one-dimensional interaction statistics). R. M. Broudy and J. W. McClure—1511
Structural study of the compound $AgSbTe_2$. R. W. Armstrong, J. W. Faust, Jr., and W. A. Tiller—1954
Surface space-charge calculations for semiconductors. D. R. Frankl—1752
Temperature dependence of Young's modulus of vitreous germania and silica. S. Spinner and G. W. Cleek—1407
Thermal conversion in *n*-type GaAs. Joseph J. Wysocki—1686(L)
Thermal expansion coefficients of bismuth. E. F. Cave and L. V. Holroyd—1357
Thermal expansion of silicon. Leon Maissel—211(L)
Transitory electrical properties of *n*-type germanium after a neutron pulse. H. J. Stein—1309
Uniform silicon *p-n* junctions. II. Ionization rates for electrons. A. G. Chynoweth—1161
Vapor-deposited single-crystal germanium. Ralph P. Ruth, John C. Marinace, and W. C. Dunlap, Jr.—995

**Shock Waves**
Attenuation of the shock wave produced in a solid by a flying plate. G. R. Fowles—655
Cratering and shock wave phenomena in steel plates at high impact speeds. Earle B. Mayfield and James W. Rogers—472
Effect of gas pressure and cone angle on the velocities of electrically excited shock waves. Philip J. Hart—436(L)
Equation of state for nineteen metallic elements from shock-wave measurements to two megabars. R. G. McQueen and S. P. Marsh—1253
Ultra-high-speed photographs refuting "cohesion in plasma." W. C. Davis and A. W. Campbell—1225

**Space Charge**
Contribution of anode emission to space charge in thermionic power converters. Anthony F. Dugan—1397
Influence of negative ions on ambipolar diffusion of electrons. Hendrik J. Oskam and Verlyn R. Mittlestadt—940(L)
Solutions of the equations of space charge flow for radial flow between concentric spherical electrodes. I. Itzkar—652
Three-dimensional space charge flow. Jorge Rosenblatt—1371
Transport of noise at microwave frequencies through a space-charge-limited diode. W. E. Vivian—957

**Space Physics**
Acoustic resonance in solid propellant rockets. F. T. McClure, R. W. Hart, and J. F. Bird—884
Experimental investigation in lead of the Whipple "meteor bumper." A. E. Olshaker—2118

**Spectra and Spectroscopy**
Crystallographic aspects of extra reflections in x-ray spectrochemical analysis. N. Spielberg and J. Ladell—1660
Spectral emissivity, total emissivity, and thermal conductivity of molybdenum, tantalum, and tungsten above 2300°K. Robert D. Allen, Louis F. Glasier, Jr., and Paul L. Jordan—1382
Transport equation for the spectral density of a multiple-scattered electromagnetic field. Dimitri S. Bugnolo—1176

**Surface Properties**
Angular distribution of sputtered material. G. K. Wehner and D. Rosenberg—177
Atom ejection patterns in single crystal sputtering. G. S. Anderson and G. K. Wehner—2305
Behavior of InSb surfaces during heat treatment. D. Haneman—217(L)
Cratering and shock wave phenomena in steel plates at high impact speeds. Earle B. Mayfield and James W. Rogers—472
Determination of surface structure using ultra-high vacuum replication. L. Bachmann, W. H. Orr, T. N. Rhodin, and B. M. Siegel—1458
Direct measurements of the surface energies of crystals. J. J. Gilman—2208
Effect of oxide layers on the diffusion of phosphorus into silicon. R. B. Allen, H. Bernstein, and A. D. Kurtz—334
Effect of the polarity of the *III-V* intermetallic compounds on etching. J. W. Faust, Jr., and A. Sagar—331
Etching of surfaces with 8-kev argon ions. R. L. Cunningham, P. Haymann, C. Lecomte, W. J. Moore, and J. J. Trillat—839
Growth from the melt. I. Influence of surface intersections in pure metal. G. F. Bolling and W. A. Tiller—1345
Growth of atomically flat surfaces on germanium dendrites. R. L. Longini, A. I. Bennett, and W. J. Smith—1204
High-energy sputtering. O. C. Yonts, C. E. Normand, and Don E. Harrison, Jr.—447
Ion-bombardment etching of silicon and germanium. I. A. Dillon, Jr., and R. M. Oman—26
Ion-bombardment etching of synthetic fibers. Franklin R. Anderson and V. F. Holland—1516
On a complex recrystallization texture in 3% silicon iron. C. G. Dunn and C. J. McHargue—1767
On the yield and energy distribution of secondary positive ions from metal surfaces. Henry E. Stanton—678
Origin of the "first-order structure" of CP4-etched Ge surfaces. G. Bonfigioli, A. Ferro, and A. Mojoni—684
Positive column formation in ion sources employing surface ionization. P. L. Auer and H. Hurwitz—1007

Production and demonstration of atomically clean metal surfaces. H. D. Hagstrum and C. D'Amico—715
Reflection of sound from randomly rough surfaces. J. M. Proud, Jr., R. T. Beyer, and Paul Tamarkin—543
Shapes of etch hillocks and pits and their correlation with measured etch rates. B. A. Irving—109
Simple theory concerning the reflection of electrons from solids. T. E. Everhart—1483
Spiral dislocations on glass fracture surfaces. W. C. Levengood and T. S. Vong—1416
Surface cleaning by cathode sputtering. O. C. Yonts and Don E. Harrison, Jr.—1583
Surface deformation of aluminum in fatigue. J. C. Grosskreutz and C. M. Gosselin—1127(L)
Thermal emission of alkali ion pulses from clean and oxygenated tungsten. Robert E. Minturn, Sheldon Datz, and Ellison H. Taylor—876

**Thermal Conductivity and Thermal Properties**
Device for measurement of the electrical properties of $Bi_2Se_3$ at elevated temperatures. Mac J. Smith, E. S. Kirk, and C. W. Spencer—1504(L)
Excitation processes in ceramics and anomalous increase in thermal conductivity at elevated temperatures. D. H. Whitmore—1109
Generation of phonons in high-power ferromagnetic resonance experiments. Ernst Schlömann—1647
Heat treatment of gallium arsenide. J. T. Edmond—1428
High-temperature Hall coefficient in GaAs. L. W. Aukerman and R. K. Willardson—939(L)
Low-temperature transport properties of commercial metals and alloys. II. Aluminums. Robert L. Powell, William J. Hall, and Hans M. Roder—496
Low-temperature transport properties of commercial metals and alloys. III. Gold-cobalt. Robert L. Powell, M. D. Bunch, and Edward F. Gibson—504
Low-temperature transport properties of commercial metals and alloys. IV. Reactor grade Be, Mo, and W. Robert L. Powell, James L. Harden, and Edward F. Gibson—1221
Measurement of thermal conductivity by utilization of the Peltier effect. III. Correction for wire radiation and determination of specimen radiation emissivity. R. Simon, R. T. Bate, and E. H. Lougher—2160
Method for determining the thermal conductivity of incandescent solids. B. B. Brenden and H. W. Newkirk—737(L)
Necessary factor for heat treatment of the permalloys in a magnetic field. E. A. Nesbitt, R. D. Heidenreich, and A. J. Williams—228S
Performance of a thermoelectric converter under constant heat flux operation. P. S. Castro and W. W. Happ—1314
Several new methods to measure the thermal diffusivity of semiconductors. J. H. Becker—612(L)
Simple radiant heating method for determining the thermal diffusivity of cellulosic materials. Stanley B. Martin—1101
Specific heat of high purity iron by a pulse heating method. D. C. Wallace, P. H. Sidles, and G. C. Danielson—168
Spectral emissivity, total emissivity, and thermal conductivity of molybdenum, tantalum and tungsten above 2300°K. Robert D. Allen, Louis F. Glasier, Jr., and Paul L. Jordan—1382
Study of heat treatments for low coercive force 14–17% aluminum iron alloys. D. Pavlovic and K. Foster—231S
Temperature dependence of anisotropy and saturation magnetization in iron and iron-silicon alloys. C. D. Graham—150S
Temperature dependence of the saturation magnetization of nickel films of thickness less than 100 A. C. A. Neugebauer—152S
Thermal conductivity of eight halide crystals in the temperature range 220°K to 390°K. Kathryn A. McCarthy and Stanley S. Ballard—1410
Thermal expansion coefficients of bismuth. E. F. Cave and L. V. Holroyd—1357
Thermal expansion of silicon. Leon Maissel—211(L)
Thermal stress analysis and Grueneisen's relation. A. M. Freudenthal—434(L)

**Thermodynamic Properties**
Apparatus for the measurement of thermal diffusivity of solids at high temperatures. B. Abeles, G. D. Cody, and D. S. Beers—1585
Energy distribution and cooling effect of electrons emitted from an arc cathode. T. H. Lee—924
Equation of state for nineteen metallic elements from shock-wave measurements to two megabars. R. G. McQueen and S. P. Marsh—1253
Optical observations concerning the polymorphic transition in the potassium halides. S. Wiederhorn and H. G. Drickamer—1666
Photovoltaic effect derived from the Carnot cycle. A. Rose—1640
Temperature dependence of the velocity of sidewise 180° domain-wall motion in $BaTiO_3$. A. Savage and R. C. Miller—1546
Thermal conversion in *n*-type GaAs. Joseph J. Wysocki—1686(L)

**Thermoelectricity**
Calculation of efficiency of thermoelectric devices. B. Sherman, R. R. Heikes, and R. W. Ure, Jr.—1
Continuous series of metastable solid solutions in silver-copper alloys. Pol Duwez, R. H. Willens, and W. Klement, Jr.—1136(L)
Diagrams representing states of operation of a general thermocouple. A. H. Boerdijk—1141
Experimental test of the first Kelvin relation. F. J. Donahoe and L. R. Testardi—1304(L)
Peltier coefficient at a solid-liquid interface. J. R. O'Connor—1690(L)

**Thin Films**
Alloying behavior of thin bimetal films, simultaneously or successively deposited. Richard B. Belser—562
Anisotropy and inversion in permalloy films. D. O. Smith, E. E. Huber, Jr., M. S. Cohen, and G. P. Weiss—295S
Annular uniaxially magnetized domains in thin Ni-Fe films. O. William Muckenhirn, A. E. LeBonte, and P. J. Besser—304S
Comments on a ruptured soap film. F. E. C. Culick—1128(L)
Cross-tie walls in thin films. Harvey Rubinstein and Robert J. Spain—306S
Damage in $UO_2$ films and particles during reactor irradiation. T. K. Bierlein and B. Mastel—2314(L)
Determination of magnetization distribution in thin films using electron microscopy. Harrison W. Fuller and Murray E. Hale—238
Domain wall velocities in thin iron-nickel films. N. C. Ford, Jr.—300S
Domain walls in thin magnetic Ni-Fe films. S. Methfessel, S. Middlehoek, and H. Thomas—302S
Electron microscopic study of thin films of the aluminum-copper eutectic prepared by a melting method. Noboru Takahashi—1287
Electron probe measurements of evaporated metal films. W. E. Sweeney, Jr., R. E. Seebold, and L. S. Birks—1061
External fields from domain walls of cobalt film. B. Kostyshyn, J. E. Brophy, I. Oi, and D. D. Roshon, Jr.—772

**Thin Films** (*continued*)
Ferrite films—new logic and storage devices. J. M. Brownlow, W. L. Shevel, Jr., and O. A. Gutwin—121S
Film stripping technique for making thin silica windows. E. Tannenbaum—940(L)
Fission fragment damage in nonfissionable thin films. T. K. Bierlein and B. Mastel—2315(L)
Flux reversal by noncoherent rotation in magnetic films. K. J. Harte—283S
Formation of thin polymer films by electron bombardment. Robert W. Christy—1680
Influence of nearby conductors on thin film switching. J. S. Eggenberger—287S
Initial susceptibility spectra of permalloy films. R. F. Soohoo—218S
Investigations into the origin of anisotropy in oblique-incidence films. M. S. Cohen, E. E. Huber, Jr., G. P. Weiss, and D. W. Smith—291S
Magnetic anisotropy in evaporated iron films. E. W. Pugh, J. Matisoo, D. E. Speliotis, and E. L. Boyd—293S
Magnetization reversal in uniaxial films near to the preferred direction. E. M. Bradley and M. Prutton—285S
Mechanical properties of thin single-crystal gold film. Avery Catlin and Walter P. Walker—2135
Microcalorimetric technique for the study of damping and hysteresis in ferromagnetic films. J. R. Mayfield—298S
Millimicrosecond magnetization reversal in thin magnetic films. W. Dietrich and W. E. Proebster—281S
More experiments on liquid films. R. M. Koros, J. Deckers, and M. Boudart—1129(L)
Noise and signal response in lead sulfide photoconductive films. H. E. Spencer—505
Nucleation experiments on thin magnetic MnBi films. Ludwig Mayer—384S
Oblique-incidence anisotropy in evaporated permalloy films. D. O. Smith, M. S. Cohen, and G. P. Weiss—1755
Observation of Néel walls in thin films. Harvey Rubinstein, Harrison W. Fuller, and Murray E. Hale—437(L)
Observations on MnBi films during heat treatment. Ludwig Mayer—346
Operation of magnetic film parametrons in the 100 to 500 Mc region. A. V. Pohm, A. A. Read, R. M. Stewart, and R. F. Schauer—119S
Polyhedral holes in evaporated AuCu films. Victor A. Phillips—697
Preferred orientation and ordering in evaporated films of Fe, Ni, and Fe-Ni. R. F. Adamsky—289S
Production and properties of thin layers of indium antimonide. G. Bate and K. N. R. Taylor—991
Production of single-crystal copper films at low temperatures. Arthur Yelon and R. W. Hoffman—1672
Some electrical properties of amorphous selenium films. Richard A. Fotland—1558
Some physical properties of thin magnetic films. A. C. Moore and A. S. Young—279S
"Spontaneous magnetic anisotropy" in polycrystalline thin films. W. Andrä, Z. Málek, W. Schüppel, and O. Stemme—422(L)
Static and dynamic studies of magnetization distribution in thin films by electron microscopy. Harrison W. Fuller and Murray E. Hale—308S
Temperature dependence of the saturation magnetization of nickel films of thickness less than 100 A. C. A. Neugebauer—152S
Tensile properties of thin, evaporated gold films. C. A. Neugebauer—1096
Transfer function and error probability of a digital magnetic tape recording system. John Wenchung Hung—396S
X-ray reflection studies of the anneal and oxidation of some thin solid films. N. Wainfan and L. G. Parratt—1331

**Vacuum Technique**
Determination of surface structure using ultra-high vacuum replication. L. Bachmann, W. H. Orr, T. N. Rhodin, and B. M. Siegel—1458
Development of facets, spirals, and etch pits on copper crystals by heating to high temperatures in high vacua. F. W. Young, Jr., and A. T. Gwathmey—225
Diffusion coefficients, solubilities, and permeabilities for He, Ne, $H_2$, and $N_2$ in Vycor glass. C. C. Leiby, Jr., and C. L. Chen—268
Flat panel vacuum thermal insulation. H. M. Strong, F. P. Bundy, and H. P. Bovenkerk—39
Interaction of atomic hydrogen with glass. T. W. Hickmott—128
Outgassing caused by electron bombardment of glass. B. Johnson Todd, Jack L. Lineweaver, and John T. Kerr—51
Penetration depth investigation of gas cleanup with radioactive tracers. C. Y. Bartholomew and A. R. LaPadula—445(L)
Use of the omegatron in the determination of parameters affecting limiting pressures in vacuum devices. David Lichtman—1213

**Viscosity and Viscoelasticity**
Effect of viscosity on the splash caused by a drop of water falling into a mixture of glycerol and water. A. G. Davis Philip—727
Ultrasonic viscoelastic properties of associated liquids. R. Meister, C. J. Marhoeffer, R. Sciamanda, L. Cotter, and T. Litovitz—854

**X-Rays and Neutron Diffraction**
Analysis of composite x-ray diffraction profiles. J. J. Slade, Jr., and L. F. Nanni—699
Comments on "Determination of atomic scattering factors." D. R. Chipman and Arthur Paskin—1130(L)
Crystallographic aspects of extra reflections in x-ray spectrochemical analysis. N. Spielberg and J. Ladell—1660
Influence of x-rays on the electrification of NaCl crystals. Anna Szaynok—211(L)
Low angle x-ray diffraction of fibrous polyethylene. A. S. Posner, L. Mandelkern, C. R. Worthington, and A. F. Diorio—536
Low-temperature x-ray diffraction studies on vanadium sesquioxide. E. P. Warekois—346S
Precision lattice parameter measurements of cold-worked metals. Robert Asimov—410
Reply to comments on "determination of atomic scattering factors." R. B. Roof, Jr.—1131(L)
Structure in vitreous silicate fibers as shown by small-angle scattering of x-rays. W. O. Statton and L. C. Hoffman—404
Technique for calculating x-ray intensities in the electron probe microanalyzer. L. S. Birks—1297(L)
Temperature dependence of the Debye temperatures of aluminum, lead, and beta brass by an x-ray method. D. R. Chipman—2012
X-ray examination of brittle fractures in extruded chromium. C. W. Weaver and K. A. Gross—626
X-ray measurement of grain size. B. E. Warren—2237
X-ray reflection studies of the anneal and oxidation of some thin solid films. N. Wainfan and L. G. Parratt—1331
X-ray study of ferromagnetic domains in cobalt zinc ferrite. Kenneth M. Merz—147

**Miscellaneous Materials and Techniques**


Absorption, reflectivity, and Faraday rotation measurements on some rare-earth iron garnets and on $\alpha$-$Fe_2O_3$. P. C. Bailey—39S

Analog study of large-signal high-frequency diodes. C. L. Andrews—1431

Analysis of a practical perpendicular head for digital purposes. George J. Y. Fan—402

Angular distribution of sputtered material. G. K. Wehner and D. Rosenberg—177

Apparatus for the measurement of the thermal diffusivity of solids at high temperatures. B. Abeles, G. D. Cody, and D. S. Beers—1585

Blood flow measurements using dynamical paramagnetic relaxation times, and paramagnetic tracer techniques. J. R. Singer—406S

Criteria for the choice of a superconducting bolometer. Bogoljub Lalevic—1234

Decay of wax electrets. M. M. Perlman—356

Depolarized components of light scattered by glasses. II. Influence of nonannealable strains on the scattering. Martin Goldstein—1697(E)

Detailed study of switching current in barium titanate. M. E. Drougard—352

Development of high-speed coincident current memory cores. Barlane R. Eichbaum—117S

Device for measurement of the electrical properties of $Bi_2Se_3$ at elevated temperatures. Mac J. Smith, E. S. Kirk, and C. W. Spencer—1504(L)

Dynamic hard sphere model. D. Turnbull and R. L. Cormia—674

Effect of geometry on thick film toroids. James C. Sagnis, Jr., Michael Teig, and Robert L. Ward—190S

Effect of previous history on switching rate in ferrites. R. W. McKay and K. C. Smith—133S

Effects of hydrostatic pressure on the properties of magnetic materials. R. E. Alley, Jr., and V. E. Legg—239S

Elastic switching properties of some square loop materials in toroidal structures. W. C. Seelbach and J. R. Kiseda—135S

Electrodeposited memory elements for a nondestructive memory. T. R. Long—123S

Electrostatic acceleration of microparticles to hypervelocities. H. Shelton, C. D. Hendricks, and R. F. Wuerker—1243

Etching of surfaces with 8-kev argon ions. R. L. Cunningham, P. Hayman, C. Lecomte, W. J. Moore, and J. J. Trillat—839

Exchange anisotropy memory effect. I. S. Jacobs and P. E. Lawrence—1388

Exchange anisotropy in rock magnetism. W. H. Meiklejohn and R. E. Carter—164S

Experimental flux pattern determination in magnetic cores. Robert L. Ward—192S

Fast switching by domain walls in ferrites. Walter Wiechec and Clinton M. Kelley—131S

Ferrite films—new logic and storage devices. J. M. Brownlow, W. L. Shevel, Jr., and O. A. Gutwin—121S

Ferromagnetic powders in waveguides at elevated temperatures. A. D. Krall and E. T. Hooper, Jr.—178S

Finite amplitude electromagnetic waves in gyromagnetic media. B. A. Auld—106S

Flat panel vacuum thermal insulation. H. M. Strong, F. P. Bundy, and H. P. Bovenkerk—39

Flow rates using nuclear or electron paramagnetic resonance techniques with applications to biological and chemical processes. J. R. Singer—125

Flux reversal by noncoherent rotation in magnetic films. K. J. Harte—283S

$GaFeO_3$: A ferromagnetic-piezoelectric compound. J. P. Remeika—263S

Generation of phonons in high-power ferromagnetic resonance experiments. Ernst Schlömann—1647

Germanium crystals grown from hollow cylindrical seeds. R. C. Frank and J. E. Thomas, Jr.—1689(L)

Harmonic generation in a ferrimagnetic disk. Glenn E. Bennett—98S

High-speed ferrite rotating half-wave plate. Franklin S. Coale—170S

Improved method for the growth of yttrium-iron and yttrium-gallium garnets. J. W. Nielsen—51S

Improvement of semiconductor surfaces by low melting glasses, possibly functioning as ion getters. S. S. Flaschen, A. David Pearson, and I. L. Kalnins—431(L)

Influence of nearby conductors on thin film switching. J. S. Eggenberger—287S

Instrumentation applications of inverse-Wiedemann effect. J. A. Granath—178S

Interaction of atomic hydrogen with glass. T. W. Hickmott—128

Investigations into the origin of anisotropy in oblique-incidence films. M. S. Cohen, E. E. Huber, Jr., G. P. Weiss, and D. O. Smith—291S

Ion drag pumps. Otmar M. Stuetzer—136

Long-term magnetic stability of Alnico and barium ferrite magnets. K. J. Kronenberg and M. A. Bohlmann—82S

Low melting sulfide-halogen inorganic glasses. S. S. Flaschen, A. David Pearson, and William R. Northover—219(L)

Magnetic anisotropy and magnetostriction of ordered and disordered cobalt-iron alloys. R. C. Hall—157S

Magnetic field measurement using ultrasonics. R. J. Radus—186S

Magnetism in medicine. Michael W. Freeman, M.D., Anthony Arrott, and John H. L. Watson—404S

Magnetization reversal in uniaxial films near to the preferred direction. E. M. Bradley and M. Prutton—285S

Manipulation of cesium. P. Leliak—609(L)

Method for determining the thermal conductivity of incandescent solids. B. B. Brenden and H. W. Newkirk—737(L)

Method for measuring iron losses in elliptically polarized magnetic fields. F. J. Young and H. L. Schenk—194S

Microcalorimetric technique for the study of damping and hysteresis in ferromagnetic films. J. R. Mayfield—298S

Millimicrosecond magnetization reversal in thin magnetic films. W. Dietrich and W. E. Proebster—281S

Miniature memory planes for extreme environmental conditions. R. Straley, A. Heuer, B. Kane, and G. Tkach—126S

Molecular beam formation by long parallel tubes. J. A. Giordmaine and T. C. Wang—463

Molecular trajectories in electric fields and state selection in a beam of sodium chloride. M. Peter, H. G. R. Venkates, and M. W. P. Strandberg—693

Multimode propagation in gyromagnetic rods and its application to traveling-wave devices. J. E. Tompkins, F. Reggia, and L. Joseph—176S

Multiple tube collimator for gas beams. G. R. Hanes—2171

New approach to high-speed storage—low-flux density materials. W. L. Shevel, Jr., and H. Chang—125S

New multi-aperture magnetic logic element. David R. Bennion—129S

Note on evaporation. S. A. Zwick—1735

Nucleation experiments on thin magnetic MnBi films. Ludwig Mayer—384S

Operation of magnetic film parametrons in the 100- to 500-Mc region. A. V. Pohm, A. A. Read, R. M. Stewart, and R. F. Schauer—119S

**Miscellaneous Materials and Techniques** *(continued)*
Orientation density and its use in quantitative texture studies. C. G. Dunn and J. L. Walter—827
Particle interaction in magnetic recording tapes. J. G. Woodward and E. Della Torre—56, 398S
Penetration depth investigation of gas cleanup with radioactive tracers. C. Y. Bartholomew and A. R. LaPadula —445(L)
Phase oscillations in high current synchrotrons. Irvin G. Henry—1338
Photoemission and related properties of the alkali antimonides. W. E. Spicer—2077
Photographic verification of ultrasonic plane wave scattering by cylinders. Harmon D. Nine and Norman W. Schubring—1274
*p* layers on vacuum heated silicon. F. G. Allen, T. M. Buch, and J. T. Law—979
Practical hysteresigraph. R. R. Bockemuehl and W. E. Sargeant—180S
Precipitation of dispsersed fine-particle magnetite. Lynore E. Slaten—74S
Precise measurement of magnetic form factors. Robert Nathans—350S
Preparation of tin single crystals for transmission electron microscopy. J. T. Fourie, F. Weinberg, and F. W. C. Boswell—1136(L)
Print-out process in photographic emulsion grains. J. F. Hamilton and L. E. Brady—609(L)
Production and properties of thin layers of indium antimonide. G. Bate and K. N. R. Taylor—991
Production of very high magnetic fields by implosion. C. M. Fowler, W. B. Garn, and R. S. Caird—588
Promotion of cubic grain growth in 3% silicon iron by control of annealing atmosphere composition. Dale Kohler—408S
Properties of manganese ferrites prepared at various oxygen pressures. Aleksander Bragiński—339S
Properties of *p*-type GaAs prepared by copper diffusion. F. D. Rosi, D. Meyerhofer, and R. V. Jensen—1105
Pulsed ferrimagnetic microwave generator. B. Elliot, T. Schaug-Peterson, and H. J. Shaw—400S
Recent appearance potential measurements using an electrostatic electron selector. Larkin Kerwin and Paul Marmet—2071
Rictometer system for calibrating transmitters of remote indicating compasses. L. I. Mendelsohn—183S
Roll magnetic anisotropy of iron-aluminum crystals. Soshin Chikazumi—158S
Scattering of radiation by a plasma. Forrest I. Boley—1692(L)
Secondary recrystallization in vacuum annealed silicon iron. G. Baer, D. Ganz, and H. Thomas—235S
Several new methods to measure the thermal diffusivity of semiconductors. J. H. Becker—612(L)
Simple radiant heating method for determining the thermal diffusivity of cellulosic materials. Stanley B. Martin—1101
Simple recording torque magnetometer. P. W. Neurath—184S
Small angle scattering investigation of Ludox mixtures. Robert H. Bragg, Irene Corvin, and John W. Buttrey —1183
Specific heat of some rare earth iron garnets and YIG at low temperatures. Horst Meyer and A. B. Harris—49S
Tetrahedral junction. Jerald A. Weiss—168S
Theory and application of dipolar ferrite modes. William H. Steier and Paul D. Coleman—99S
Time discrimination in solid-state infrared quantum counters. J. V. Jelley—1145
Transfer function and error probability of a digital magnetic tape recording system. John Wenchung Hung—396S
Use of $SF_6^-$ for calibration of the electron energy scale. G. J. Schulz—1134(L)
Vapor-deposited single crystal germanium. Ralph P. Ruth, John C. Marinace, and W. C. Dunlap, Jr.—995